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www.asti.dost.gov.ph

Republic of the Philippines
Department of Science and Technology

ADVANCED SCIENCE AND TECHNOLOGY INSTITUTE

2012 ANNUAL REPORT


TECHNICOM

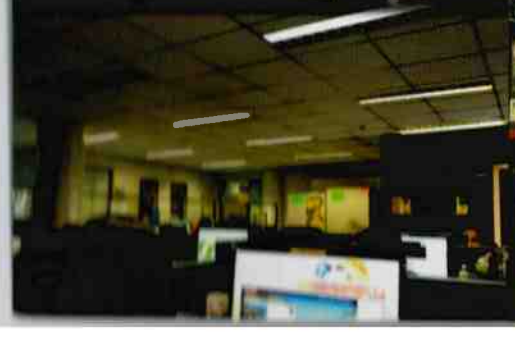




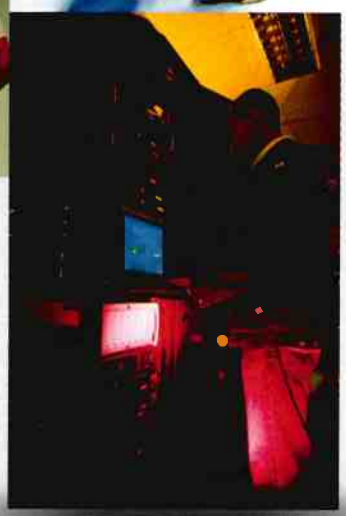







Birthday
MERIENDA



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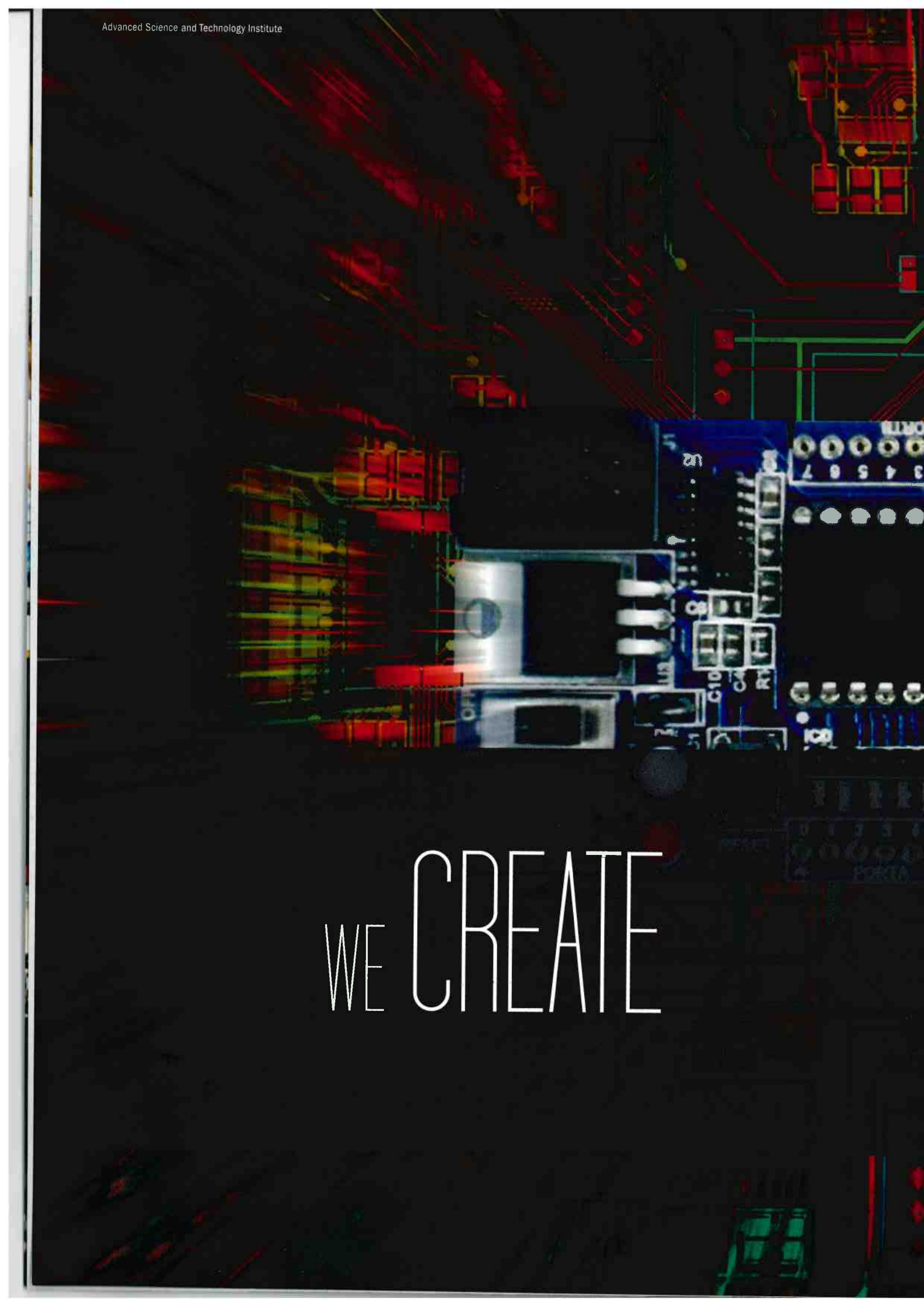
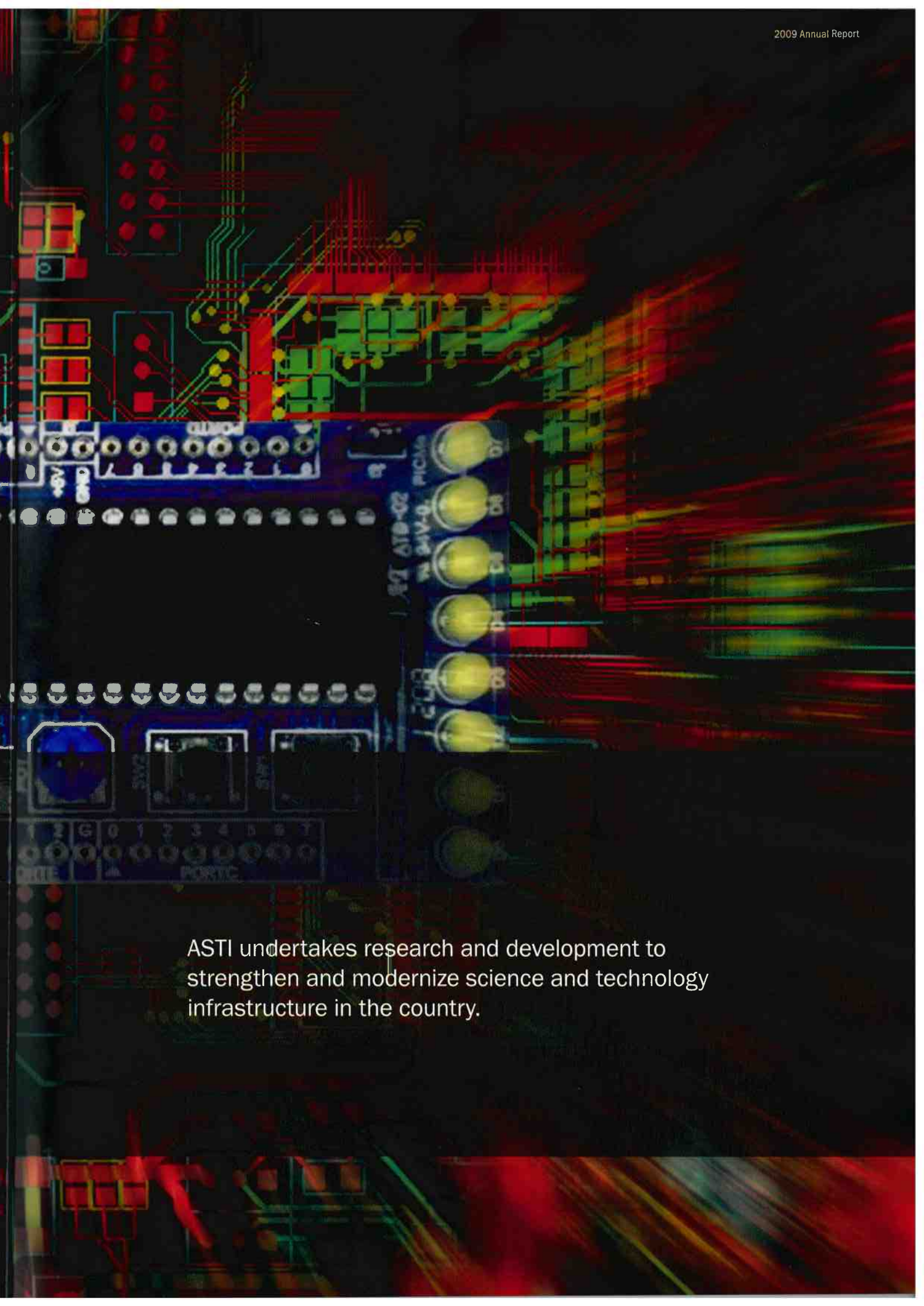
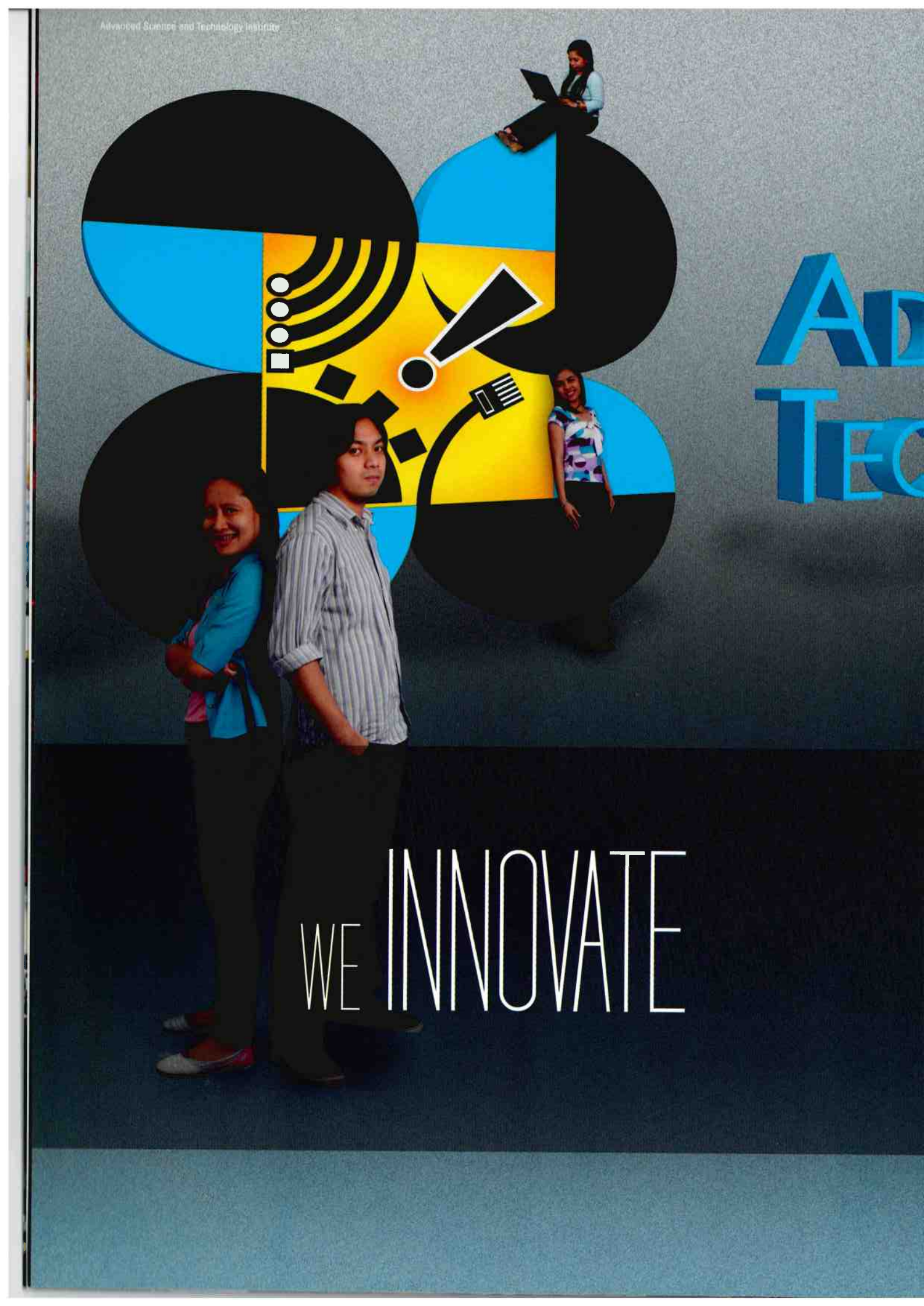
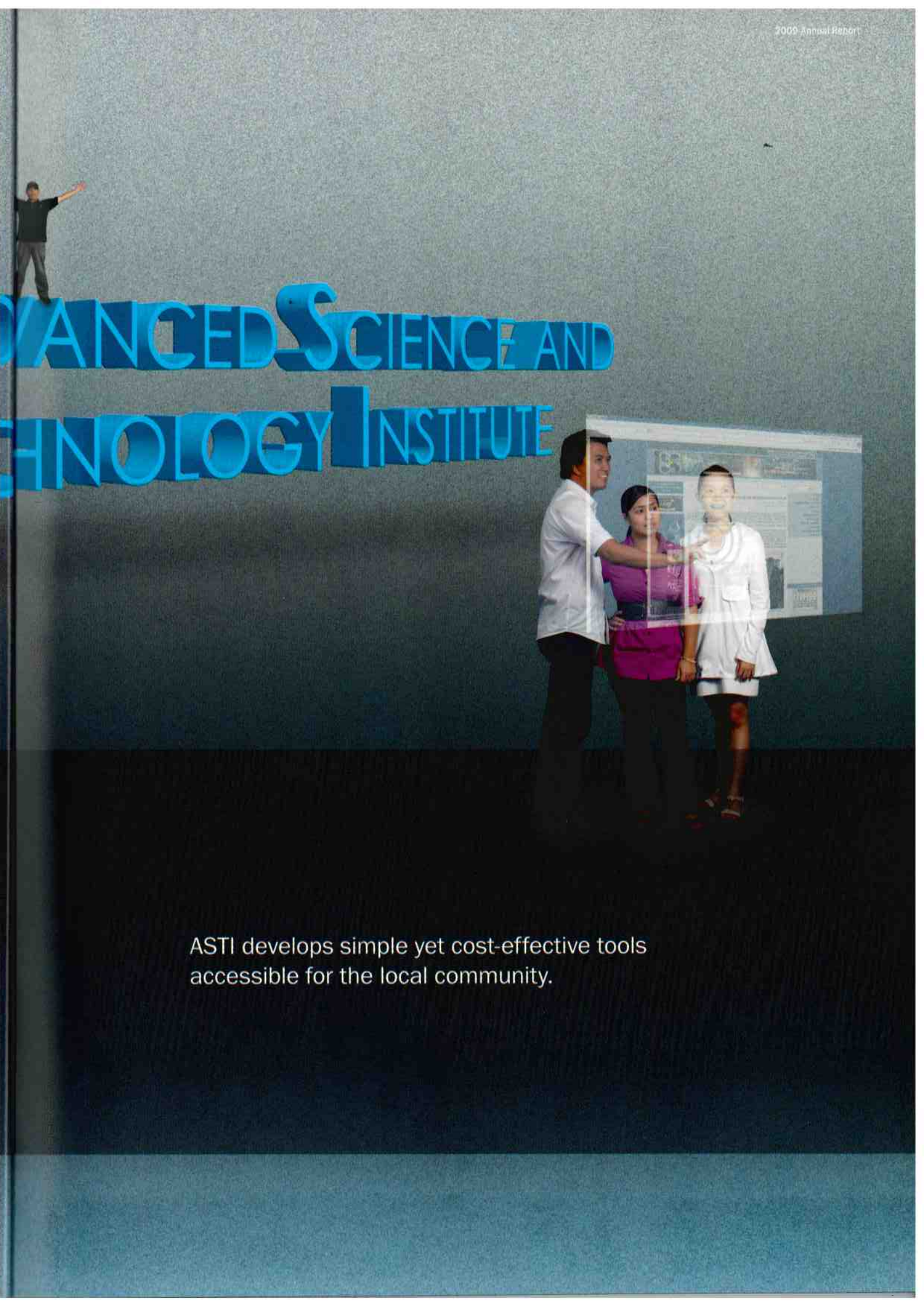


WE CREATE



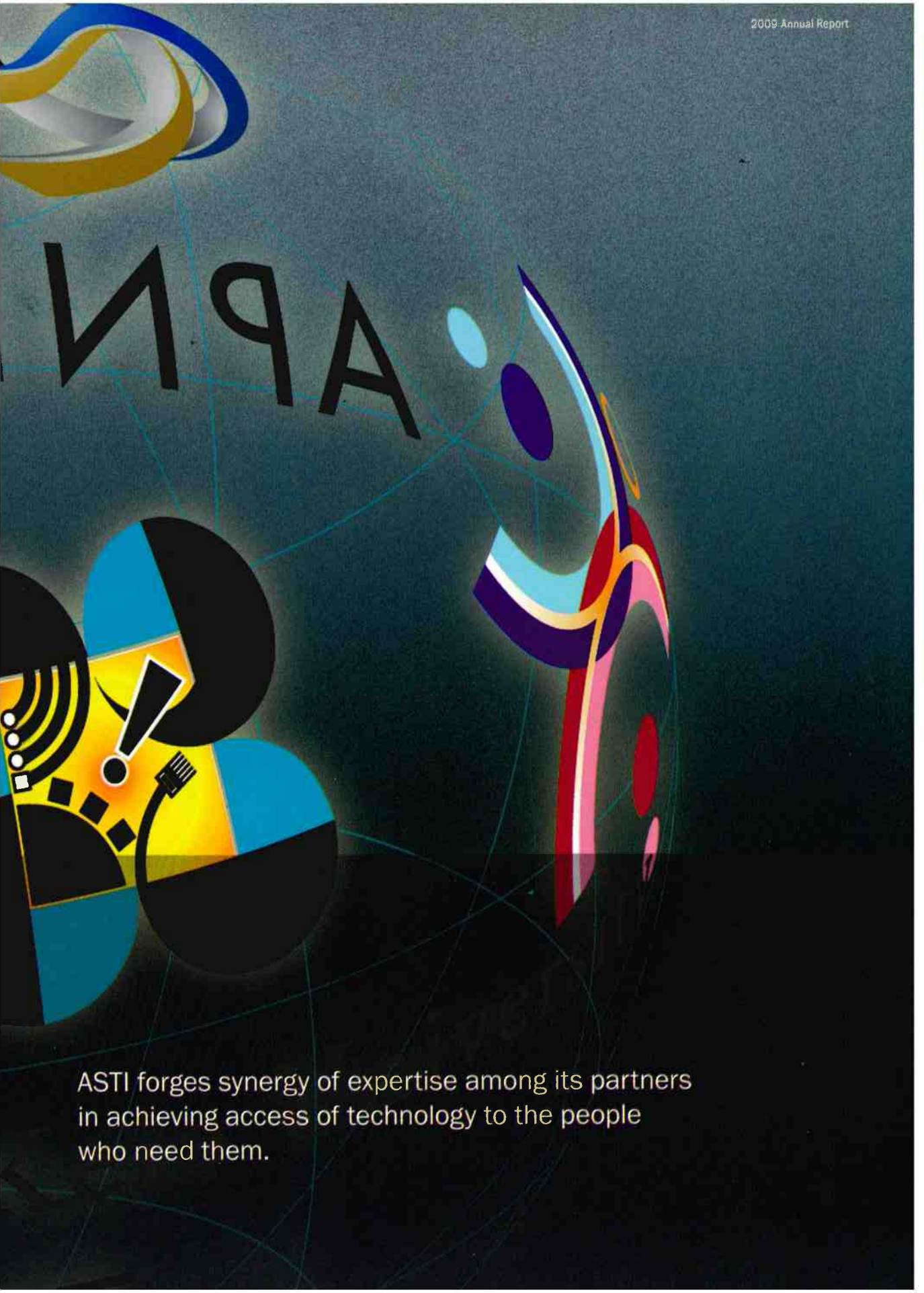
ASTI undertakes research and development to strengthen and modernize science and technology infrastructure in the country.


AD
TEC
WE INNOVATE

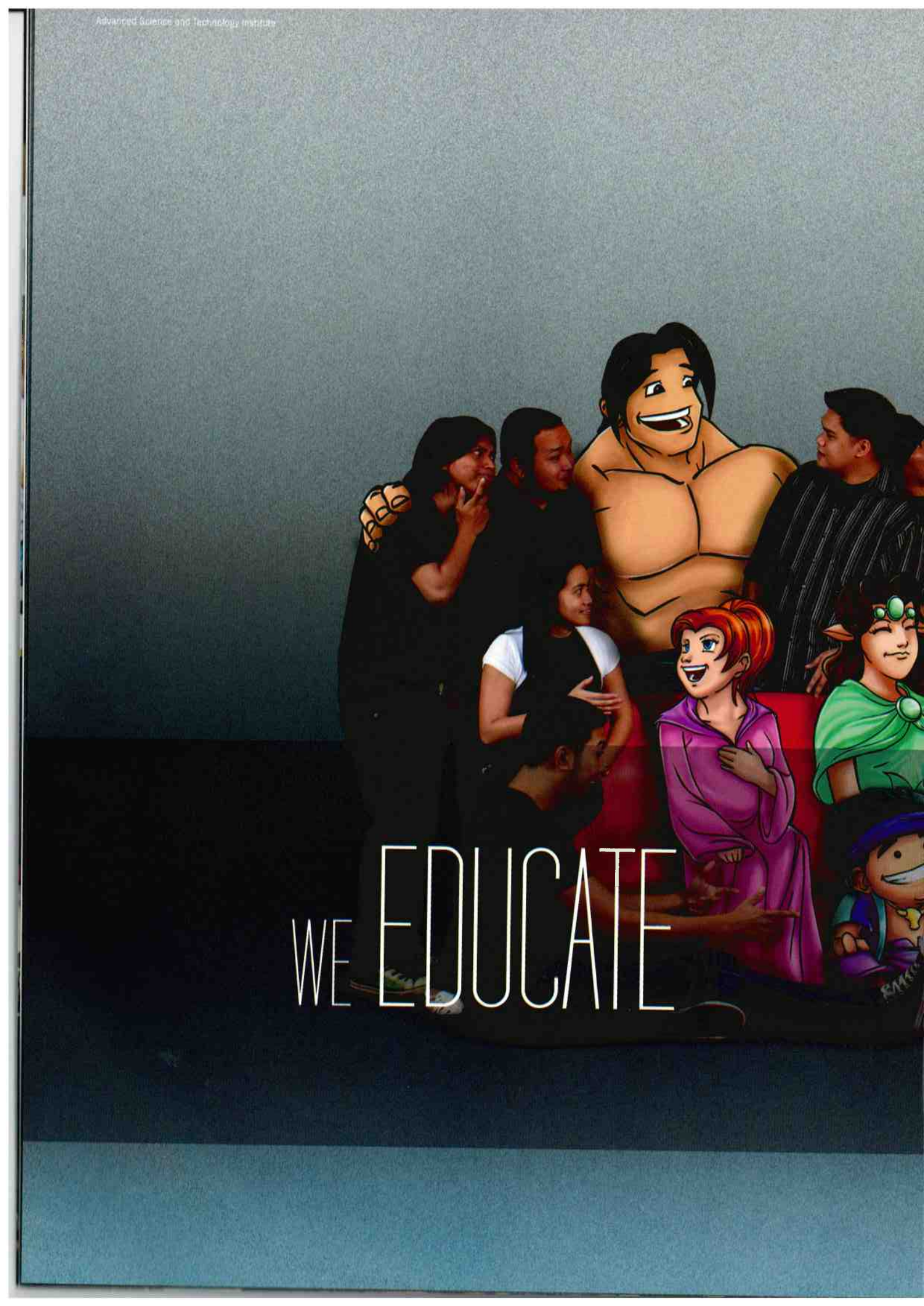


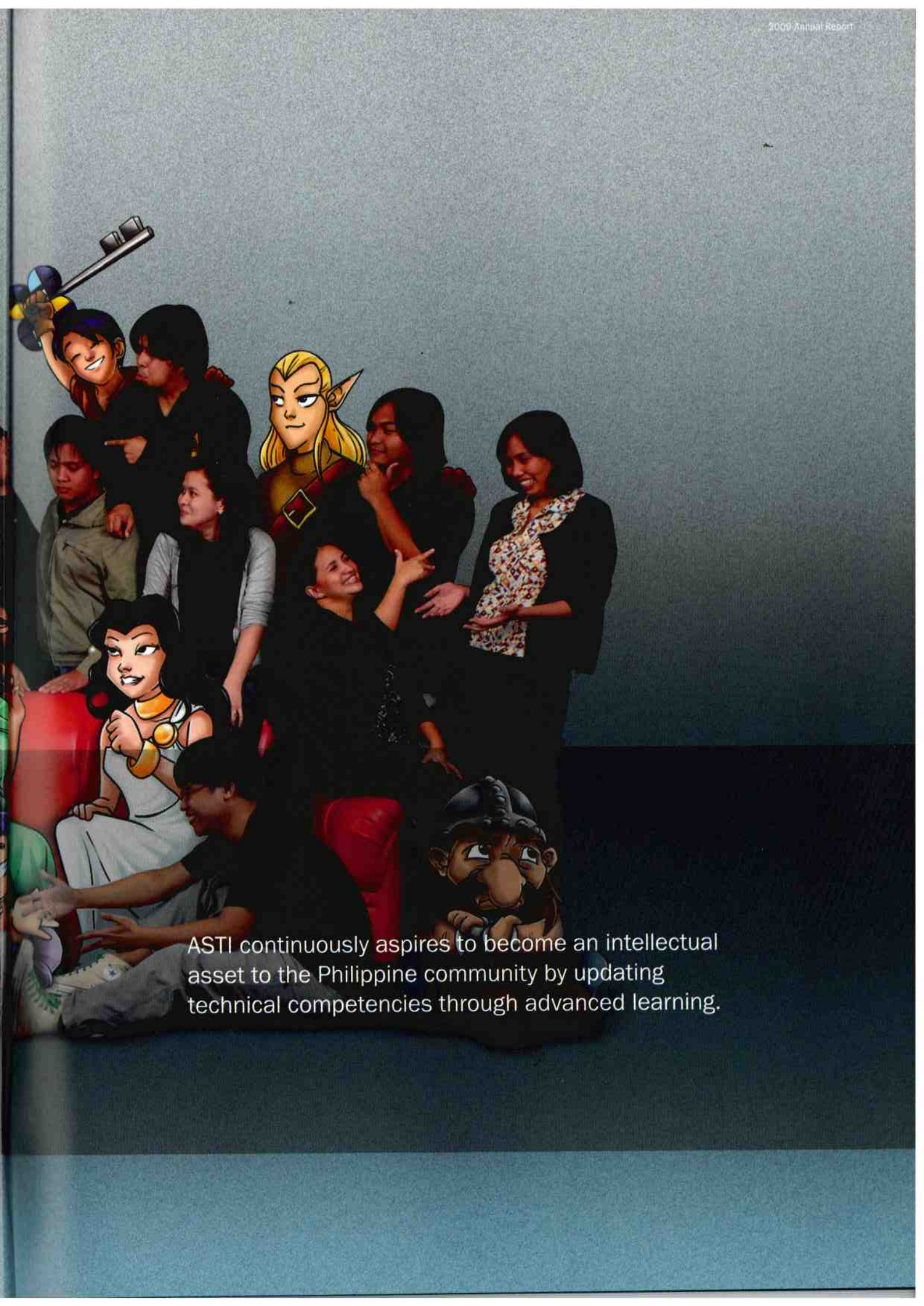
ASTI develops simple yet cost-effective tools accessible for the local community.


TEIN2
COLLABORATE

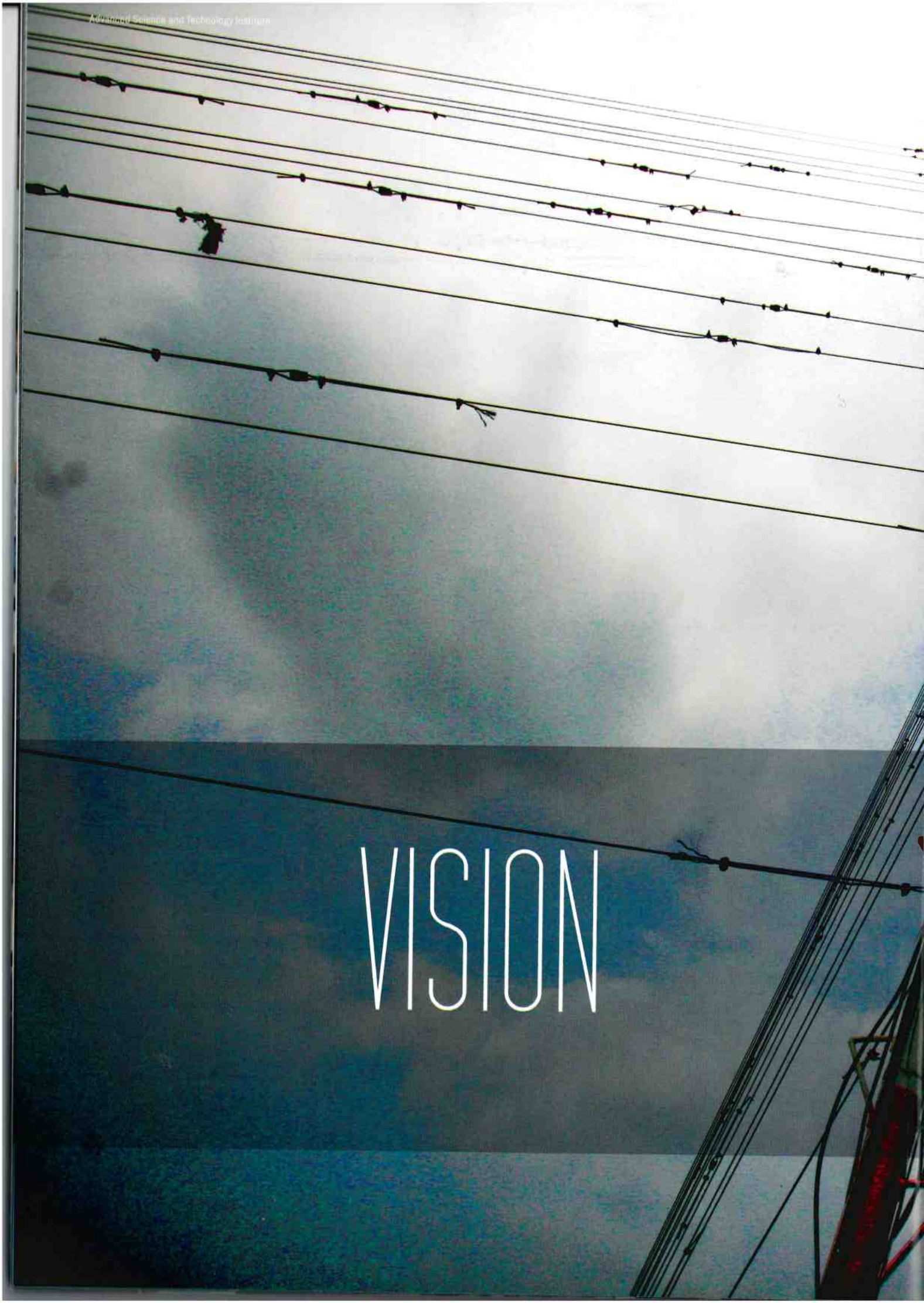


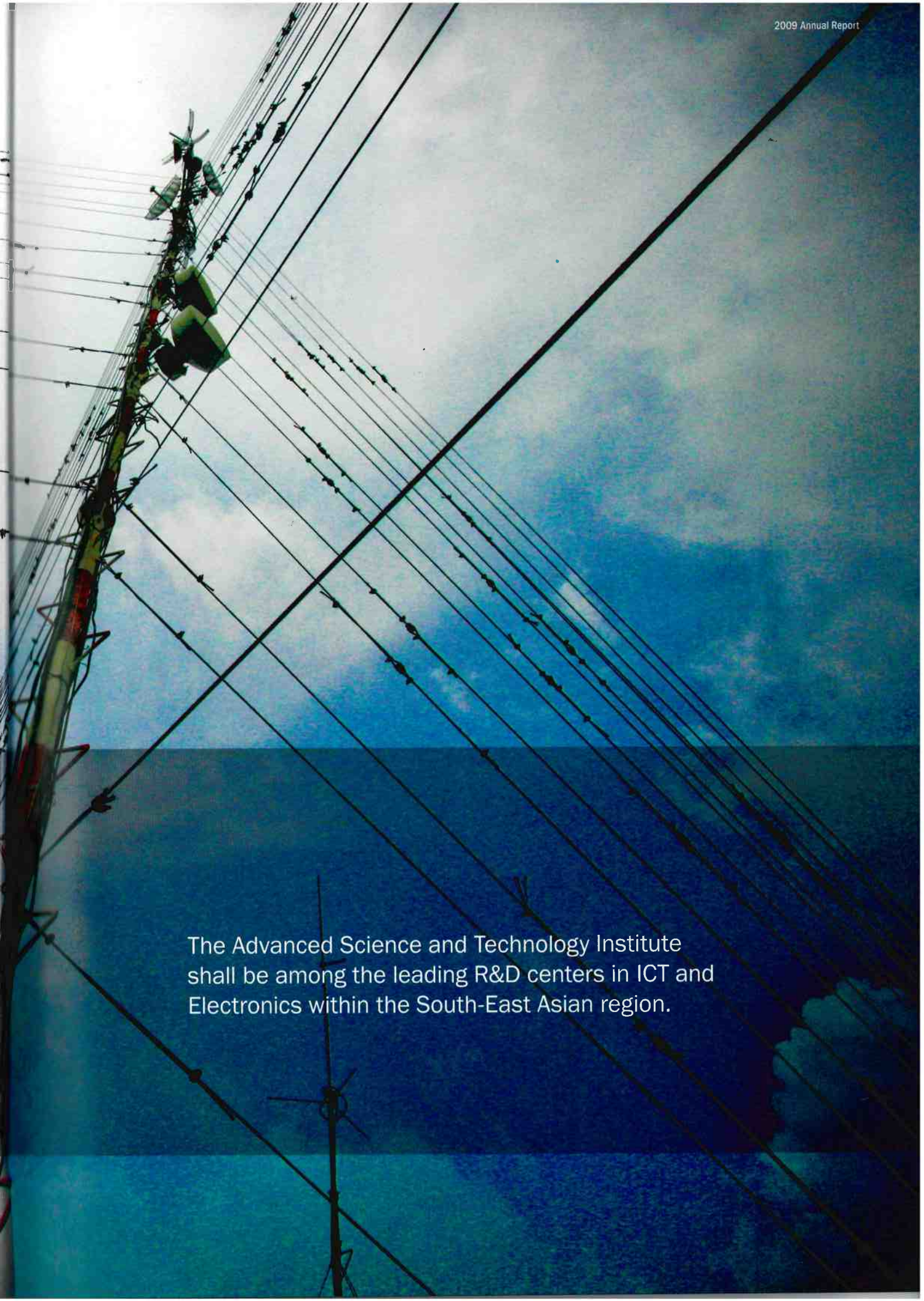
ASTI forges synergy of expertise among its partners in achieving access of technology to the people who need them.


WE EDUCATE

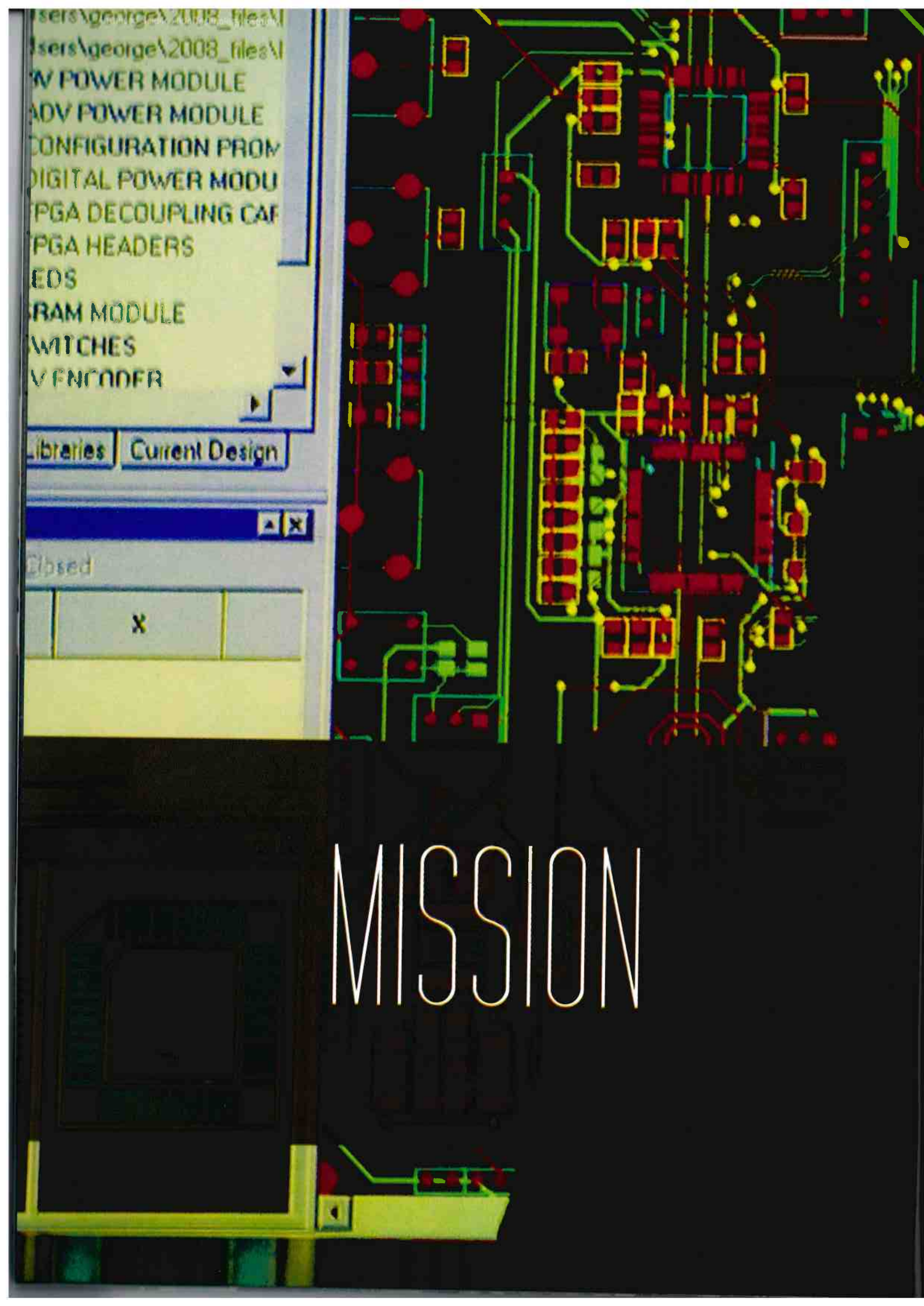


ASTI continuously aspires to become an intellectual asset to the Philippine community by updating technical competencies through advanced learning.





The Advanced Science and Technology Institute shall be among the leading R&D centers in ICT and Electronics within the South-East Asian region.


sers\george\2008_files\
V POWER MODULE
ADV POWER MODULE
CONFIGURATION PROM
IGITAL POWER MODU
PGA DECOUPLING CAP
PGA HEADERS
EDS
RAM MODULE
WITCHES
V ENCODER
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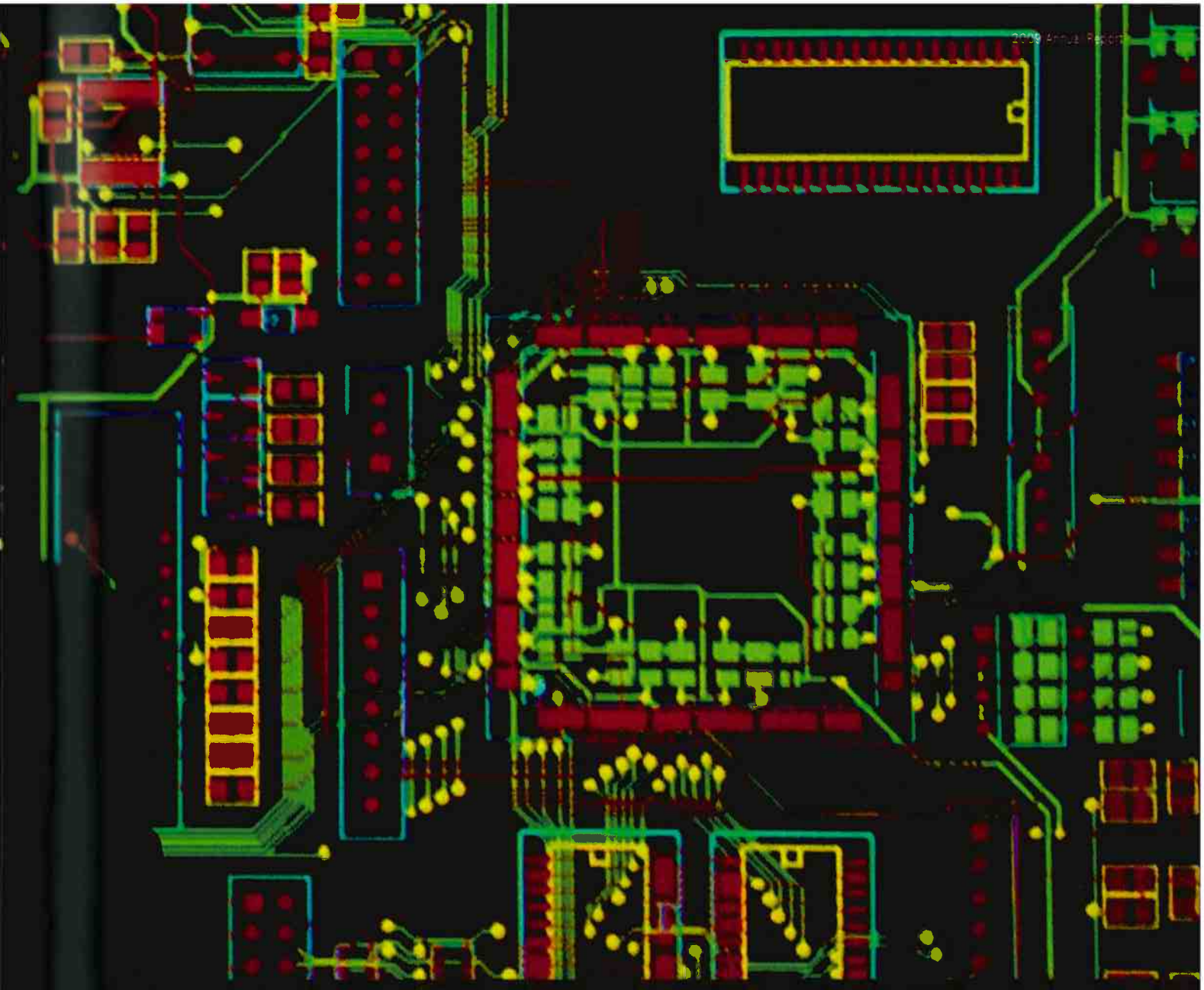
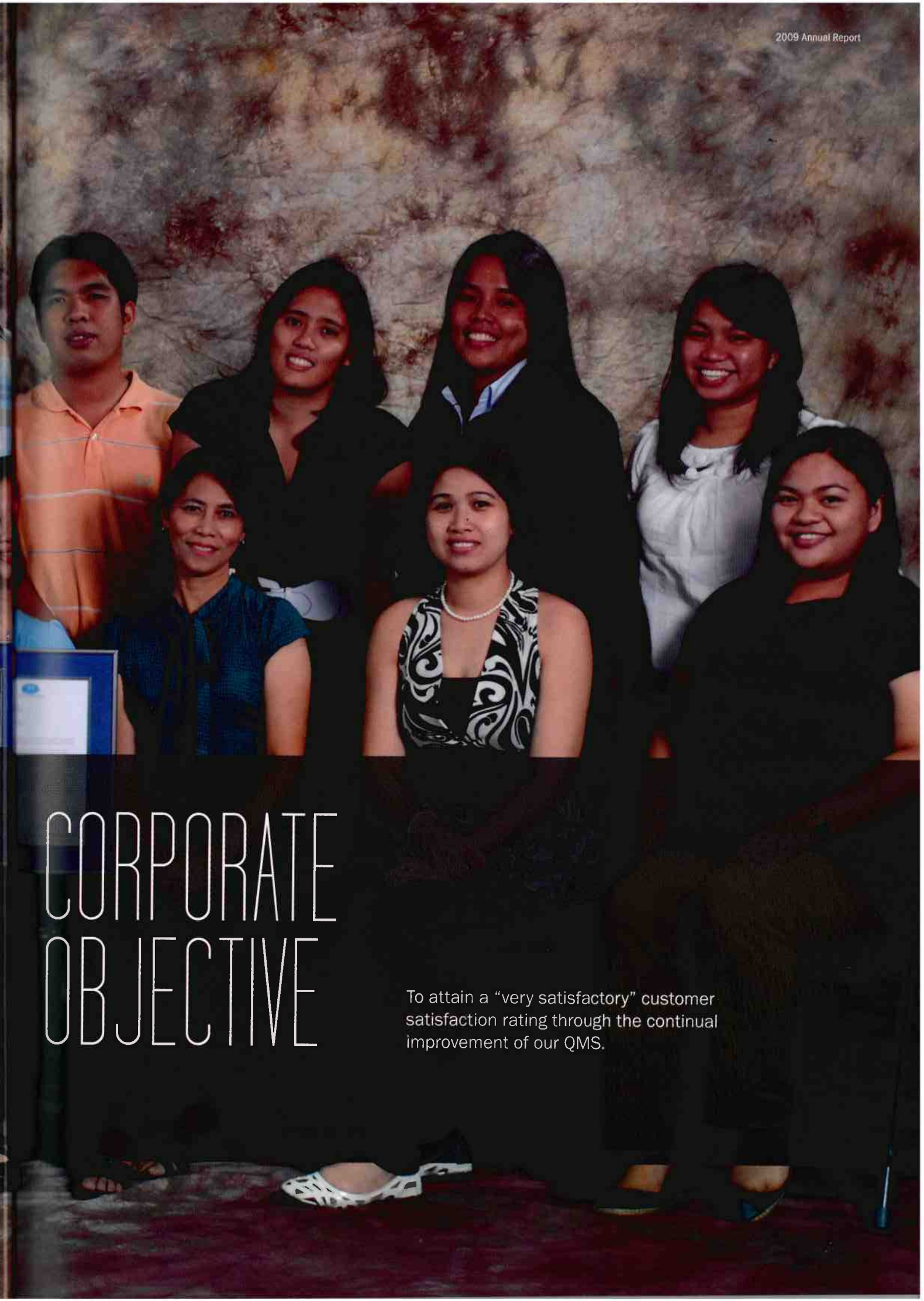
Current Design
Closed
X
MISSION



The Advanced Science and Technology Institute is committed to the development of the Filipino society and the Philippines as a nation. We shall contribute to the attainment of national development priorities and the growth of Philippine enterprises by providing innovative solutions using ICT and electronics technologies.

QUALITY POLICY

We are committed to provide innovative solutions using Information and Communications Technology as well as Electronics Technology to both the government and the private sectors with the highest standards of quality and reliability, within our capabilities and resources, according to customer and all applicable regulatory and statutory requirements, and to continually improve the effectiveness of our Quality Management System at all times in order to meet customer satisfaction.



CORPORATE OBJECTIVE

To attain a "very satisfactory" customer satisfaction rating through the continual improvement of our QMS.

Messages

Year after year, ASTI has proven to be one of the most dynamic RDIs of the DOST. I commend the Institute for its continued pursuit to build and strengthen its many partnerships with government, academe, private sector, and international organizations. Most of ASTI's projects and other undertakings this year have been joint collaborations, which proves that the Institute recognizes the value of collaboration in enabling cooperation, optimizing resources, and enhancing the sharing and generation of new knowledge.

I would like to recognize ASTI for having proudly represented DOST and the whole country in regional technical committees, and globally significant events related to networking, ICT infrastructures, open source technologies, and ICT/Electronics cooperation. In the Asia-Pacific region, the Philippines has been actively involved in initiatives that set the direction in ICT for these areas.

Let me also congratulate ASTI for becoming one of the first RDIs to be awarded an ISO 9001:2000 Certification. This distinction shows the Institute's commitment to quality in the delivery of its products and services.

To the ASTI family, may you continue to bring excellence to DOST and the country!

Estrella F. Alabastro, Ph.D.

The Advanced Science and Technology Institute (ASTI) has been implementing collaborative projects that combine resources of different institutions and take advantage of their respective strengths and expertise. Indeed, collaboration with industry, government and academic partners has been a major key to the realization of ASTI's mission - the provision of innovative ICT and electronics based solutions to attain national development goals and the growth of Philippine enterprise.

This year, ASTI, in partnership with the Technology Resource Center, and with the support of the Department of Science and Technology (DOST) and the Philippine Economic Zone Authority (PEZA), successfully inaugurated the DOST PEZA Open Technology Business Incubation with a total of eleven (11) start-up incubatees as of year-end. We expect OpenTBI to have twenty (20) incubatees by next year as we continue to strengthen and establish new partnerships.

Further, ASTI embarked on cooperation projects funded by the European Commission, under its FP7 Programme, including the EU-SEACOOP Project and the EU-AsiaGrid Project. Another milestone, which ASTI reached in the international arena, was its remarkable teamwork in successfully mounting the biggest Internet technical conference in the region, the APRICOT 2009.

This year, ASTI was awarded an ISO 9001: 2000 Certification, a seal of its perseverance to deliver quality research and development outputs, products and services. It is likewise on track for an ISO 9001:2008 Certification by next year as it pushes for greater accountability, economy, efficiency, effectiveness and ethicality in its operations.

Truly, ASTI has grown as an institute striving for excellence in R&D, as well as research and education over the years. We will contribute with our endeavors and collaborative efforts to achieve our vision to be among the leading R&D organizations in our regions.

To our partners, thank you for your trust and cooperation. To my fellow ASTI workers, congratulations for our achievements and thank you for your strong dedication and support to the Institute. Let us all continue to work together in achieving our common objectives to advance our country and uplift our fellow Filipino.

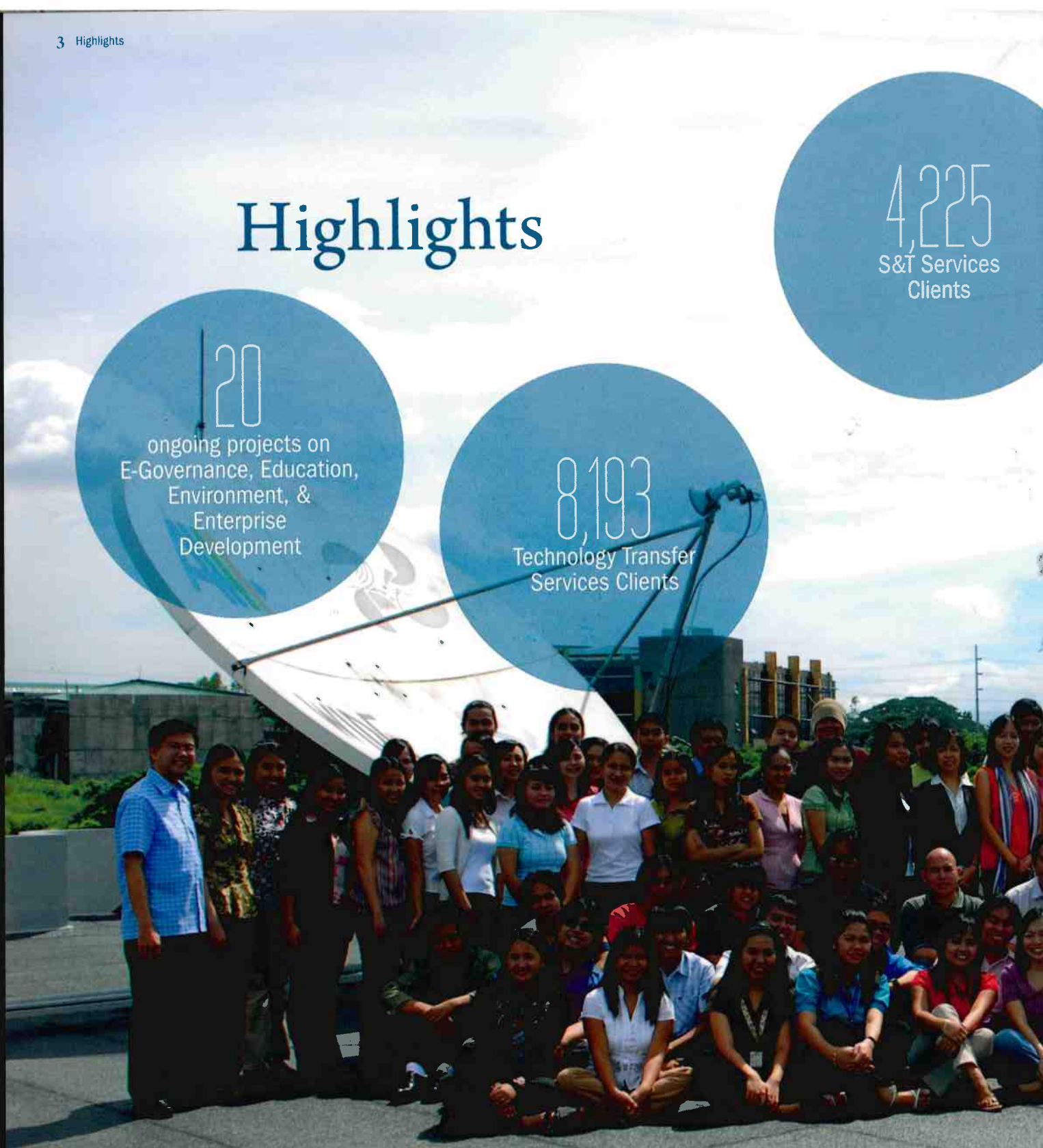
Denis F. Villorente

Highlights

4,225
S&T Services Clients

20
ongoing projects on E-Governance, Education, Environment, & Enterprise Development

8,193
Technology Transfer Services Clients



The accomplishments of ASTI for CY 2009 highlighted several ICT - and Electronics - related programs, activities, and projects which generated the following Major Final Outputs: Research and Development (R&D), Technology Transfer Services, and Science and Technology (S&T) Services.

In terms of MFO 1: Research and Development, the Institute was able to implement 20 projects focusing on four thematic areas such as, e-Governance, Education, Environment and Enterprise Development.

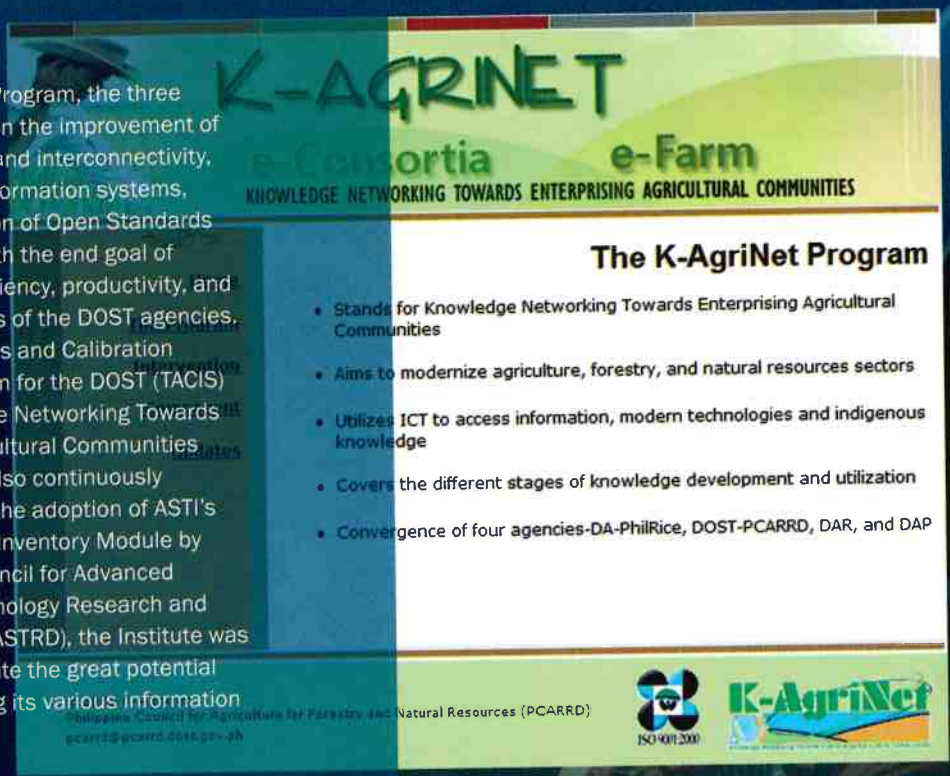
With regard to MFO 2: Technology Transfer Services which cover diffusion and commercialization activities, a total of 8,193 clients from private companies, educational institutions, government agencies, and

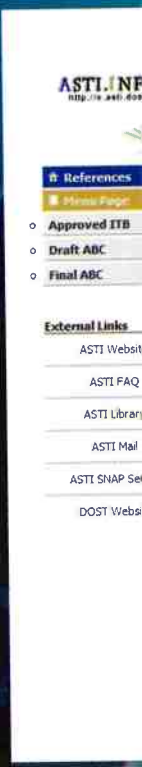
private individuals became interested in the technologies, products, and solutions developed by ASTI. The commercialization efforts on GSM Data Terminal Kit, Digital Wood Moisture Meter, Digital Multimeter, PICMe microcontroller starter kit, and Bayanihan Linux 4.0, necessitated the signing of eight agreements with adoptors and eventually generated a gross income of PHP 264,761.

Finally, the MFO 3: S&T Services, which include Domain Name System (DNS) registry for .gov.ph, PREGINET services, and training services, were extended to about 4,225 clients from both private and government sectors. A significant income of PHP 14,134,932 was generated from these S&T services.

e-GOVERNANCE

Under the eDOST Program, the three projects focusing on the improvement of ICT infrastructure and interconnectivity, development of information systems, and implementation of Open Standards were continued with the end goal of improving the efficiency, productivity, and delivery of services of the DOST agencies. The Tests, Analyses and Calibration Information System for the DOST (TACIS) and the Knowledge Networking Towards Enterprising Agricultural Communities (K-AgriNet) were also continuously maintained. With the adoption of ASTI's Procurement and Inventory Module by the Philippine Council for Advanced Science and Technology Research and Development (PCASTRD), the Institute was able to demonstrate the great potential of commercializing its various information systems.



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This site is W3C XHTML 1.0
Tests, Analyses and Calibration Information System (TACIS) is an E-Government project funded by the Commision on Information and Communication Technology (CICT). It is an integrated information system that aims to enhance the operational capability of the Department of Science and Technology's testing, analysis and calibration services.
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mass standards
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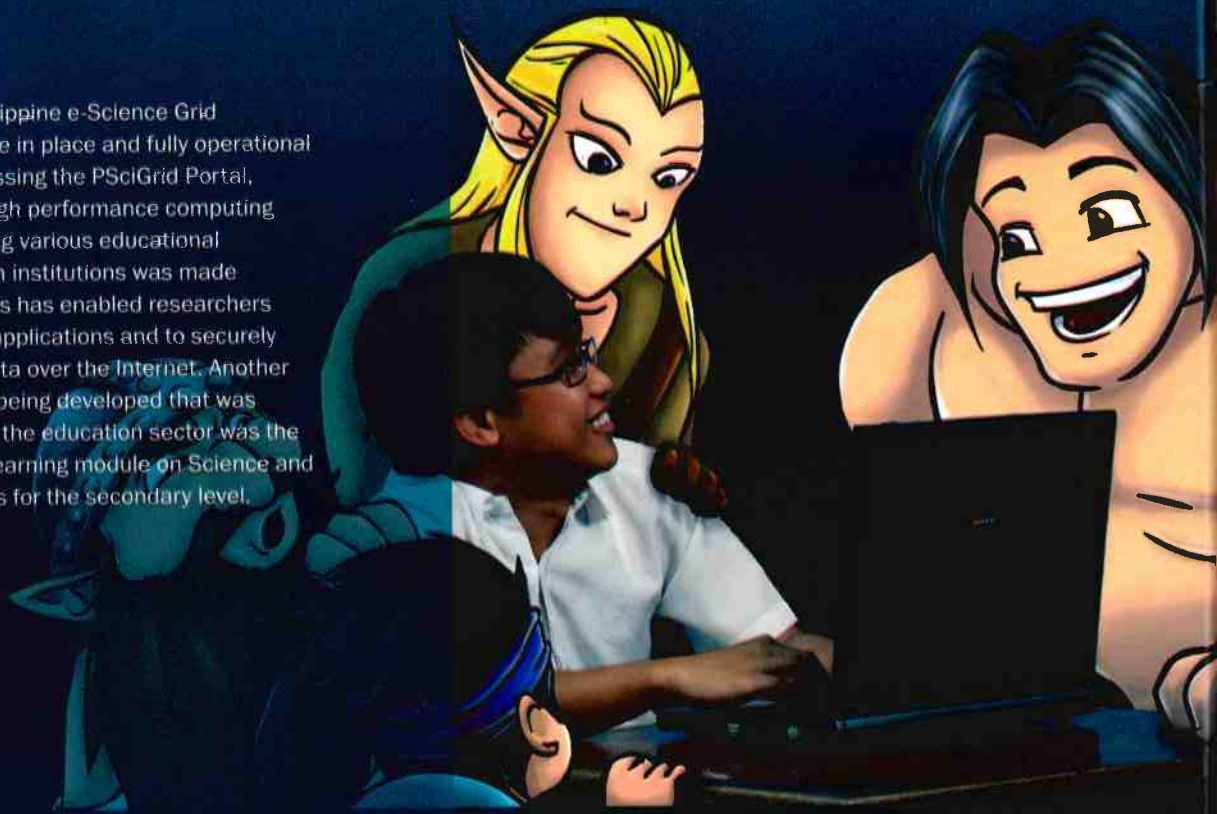
TACIS Framework Beta Version 1 Build 130
Open Standards and
Program & Change
Management Component

eDUCATION

With the Philippine e-Science Grid infrastructure in place and fully operational and by accessing the PSciGrid Portal, sharing of high performance computing facility among various educational and research institutions was made possible. This has enabled researchers to run their applications and to securely exchange data over the Internet. Another ICT product being developed that was intended for the education sector was the interactive learning module on Science and Mathematics for the secondary level.



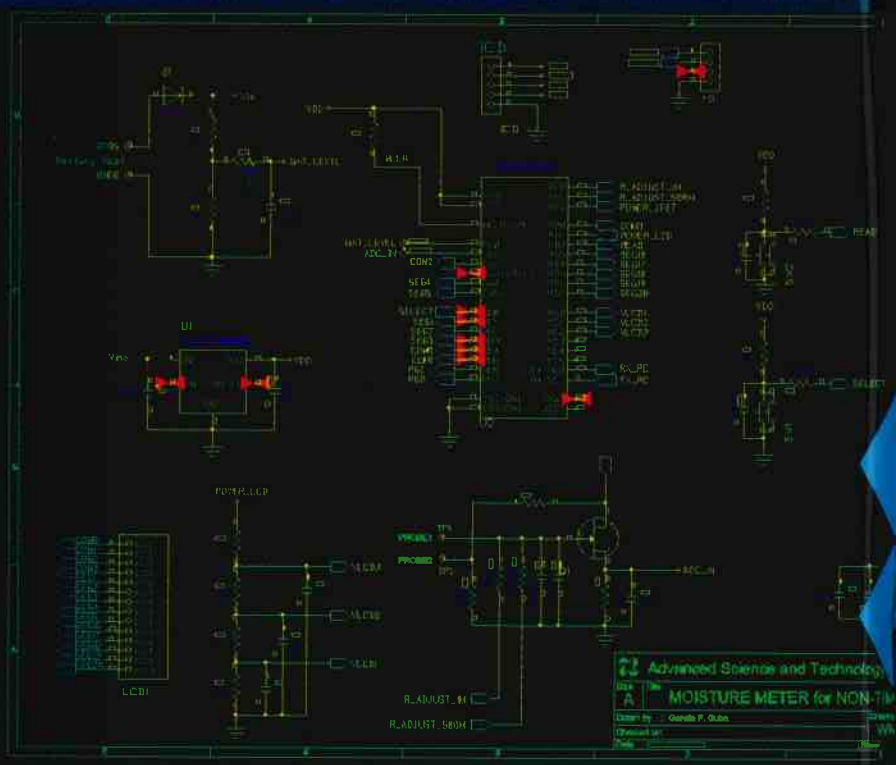

PSciGrid
Philippine e-Science Grid

eNVIRONMENT

As the development of the Early Warning System for Tsunami came to an end, ASTI initiated another research endeavor focusing on Field Monitoring System, a modern technology for acquiring agricultural data that is essential for the improvement of crop production. Also continued was the implementation of the Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy Prevention, a low-cost standalone weather station capable of providing additional information for weather forecasting. These three projects were carried out under the ICT for the Environment Program, which aims to establish a nationwide environmental monitoring network and to provide solutions for the prevention and mitigation of natural disasters.

eNTERPRISE DEVELOPMENT

After the formal launch in July 2009, ASTI together with the Technology Resource Center began the full operation of the DOST-PEZA Open Technology Business Incubator with 11 start up companies being assisted. Continual development of Digital Wood Moisture Meter for Bamboo and Other Non-Timber Forest Products was also accomplished.

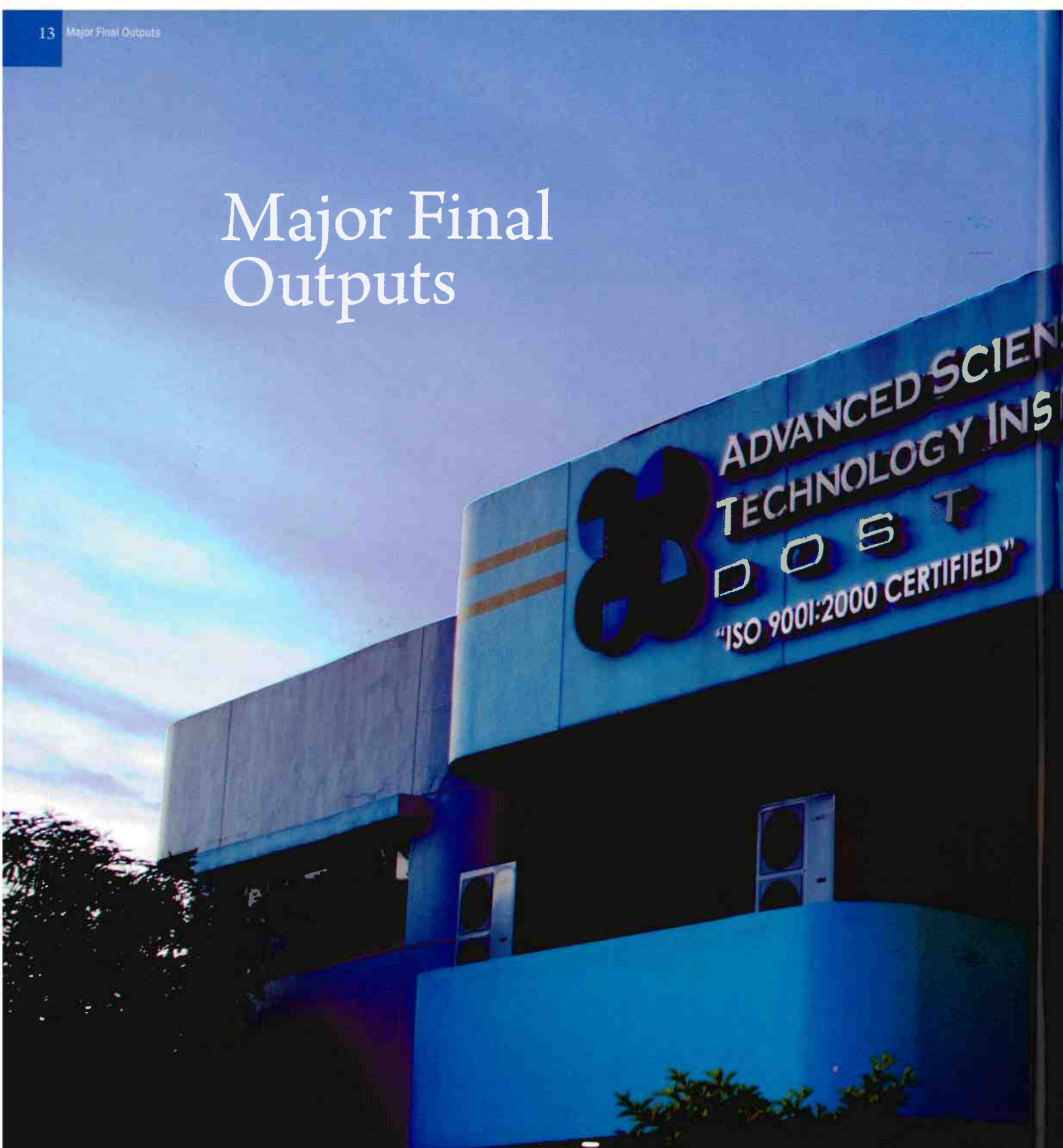


Protection of intellectual property (IP) generated from its R&D undertakings is an utmost concern of ASTI. Hence in 2009, IP protection was obtained for digital wood moisture meter. The application filed for utility model and copyright for the said product was approved.

To help disseminate the R&D results and to promote the Institute's project initiatives and technical competencies to the local and international research communities, submission of technical papers was encouraged. A paper on "FPGA Based Agrep for DNA Microarray Sequence Searching" was accepted and presented at the 2009 International Conference on Computer Engineering and Applications (ICCEA 2009) and another one on "Harnessing ICT and High Performance Computing for Environmental Monitoring and Hazard Mitigation" was presented during the Earth Sciences International Conference (SIC 2009).


open tbi

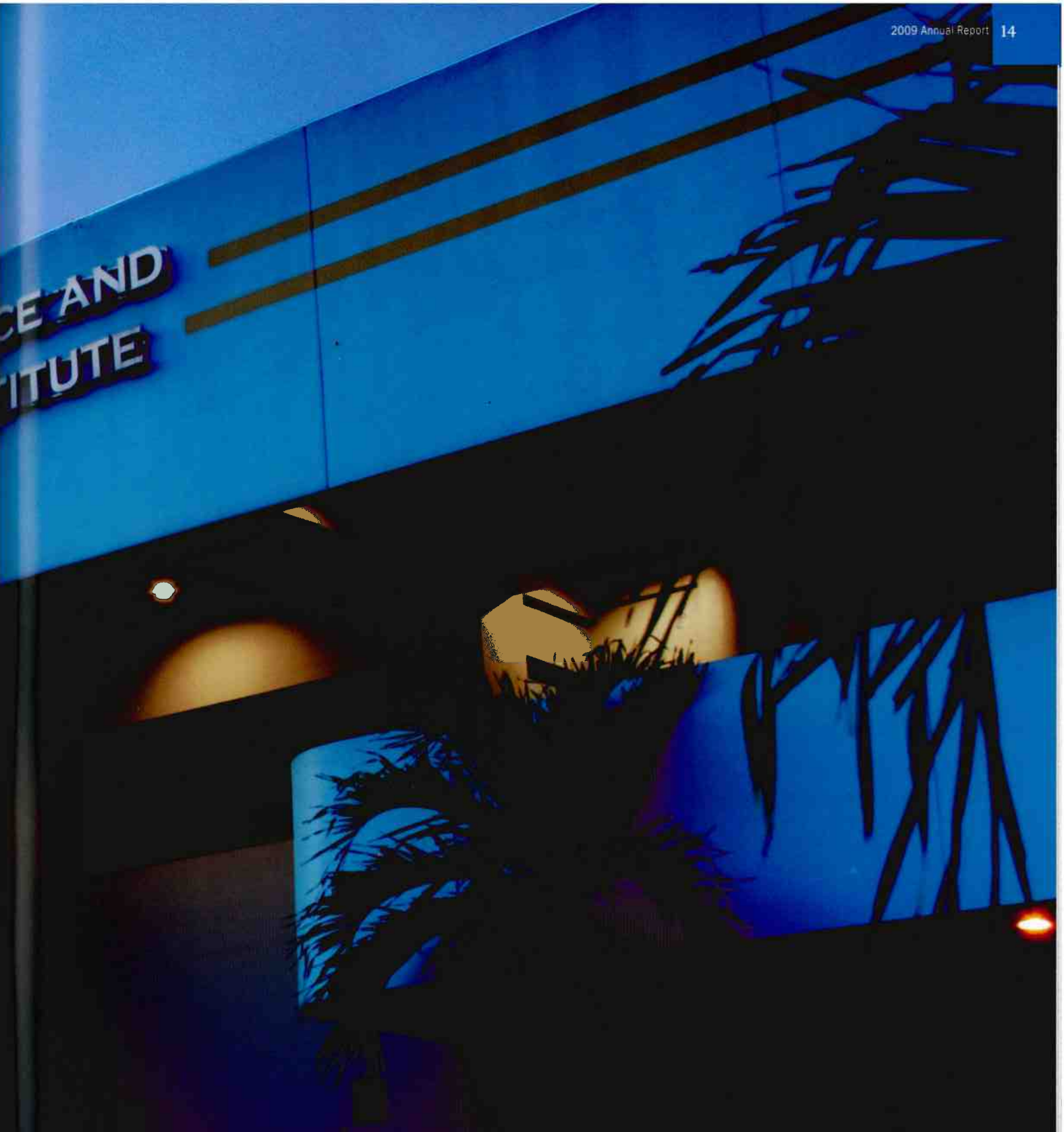
Major Final Outputs



The implementation of ASTI's programs, activities, and projects in 2009 resulted in three Major Final Outputs: MFO 1 - Research and Development (R&D); MFO 2 - Technology Transfer Services; and MFO 3: Science and Technology (S&T) Services.

Given its mandate of conducting research and development in Information and Communications Technology (ICT) and Microelectronics, ASTI focused its activities on two R&D programs, namely ICT and Microelectronics and Embedded Systems. A total of 20 projects generating technologies, products, and solutions that are useful to industry, academe, and government were implemented.

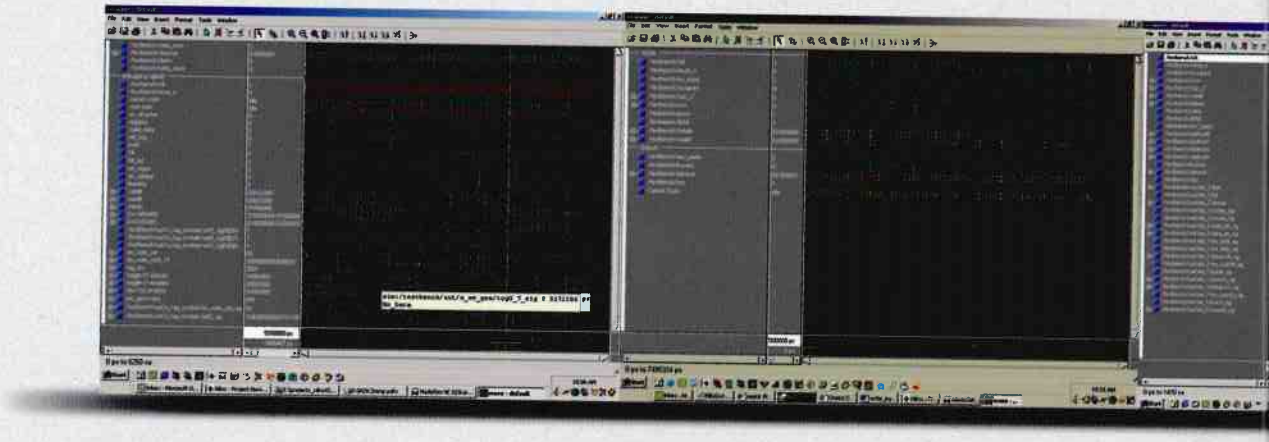
In addition to R&D, ASTI is committed to render technology transfer services with the end-goal of fostering linkages with prospective adoptors and catalyzing the



commercialization of technologies, products, and services with high technological and economic potentials. These services cover both technology diffusion and commercialization activities.

Provision of S&T services that are beneficial to industry, academe, government, non-government organizations and the Filipino people in general, was also prioritized by ASTI. The S&T services offered were mostly technical in nature. These include management of the Domain Name System (DNS) of government agencies; conduct of technical trainings and seminars; and provision of PREGINET services such as network services and links, server co-location, videoconferencing/ videostreaming, VoIP installation, etc.

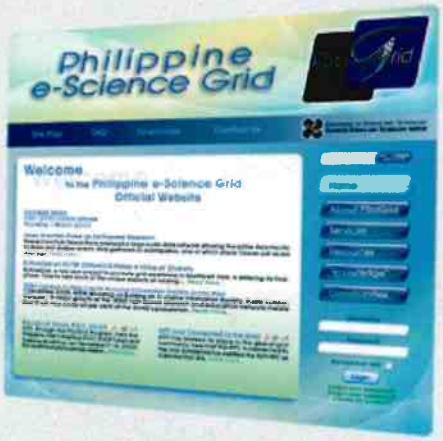
MFO 1 - Research and Development



Information and Communications Technology (ICT) Research and Development Program

The Philippine e-Science Grid (PSciGrid) Program

The PSciGrid is the Philippines' main initiative to establish a national e-Science grid infrastructure that would fully harness advanced network technologies to enable computing resource sharing among researchers. The projects that are currently being implemented under the Program are:



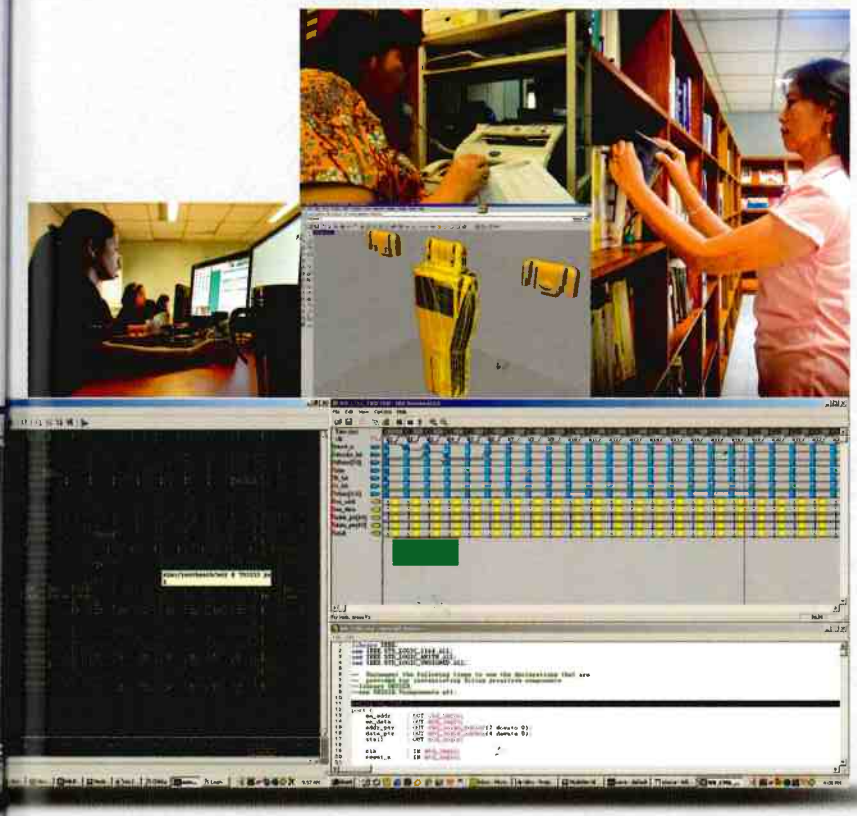
The Philippine e-Science Grid website
www.pscigrid.gov.ph

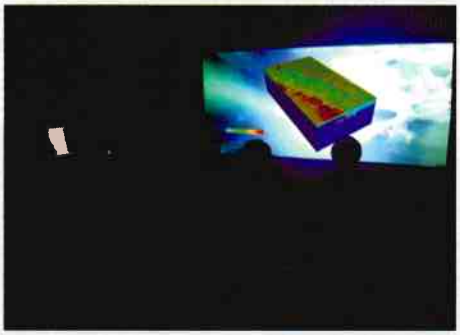
Project 1: Boosting Grid Computing Using Reconfigurable Hardware Technology (HPRC), *On-going*

The project aims to initiate the setup of the Philippine e-Science Grid (PSciGrid). Through the project, a high performance computing (HPC) facility was set up within ASTI, comprising 45 computing nodes. Applications on bioinformatics, meteorology, and oceanography run in the facility. The project enabled users that include DOST-PAGASA, UP-Marine Science Institute, UP-National Institute of Physics, and UPLB BIOTECH, to run their applications on the HPC facility using secure shell or SSH network protocol to allow secure exchange of data over the Internet.

For 2009, the 45 Mbps fiber optic link of Ateneo de Manila University (AdMU) to ASTI was installed. With the physical link to UP-CSRC and AdMU completed, the project team has started coordinating with the system/cluster administrators of the two universities to enable the interconnectivity of the HPC facilities. These three will form the pilot e-Science Grid platform.

The project also carried out advocacy activities such as the Philippine Grid Computing 2009 Forum and Workshop, which aimed to promote Grid Computing to local academic and research institutions, especially those with data- and compute-intensive research. Likewise, as part of the objective to participate and secure membership in international Grid computing communities, project





PSciGrid 3D Visualization Facility at ASTI

representatives attended various conferences, training, and forums to enhance staff's capability in Grid computing and keep updated on the latest developments on the technology.

Project 2: Boosting Social and Technological Capabilities for Bioinformatics Research (PBS), *On-going*

Bioinformatics is an important discipline that is fast emerging in academic research and industrial applications, and thereby, one of the areas identified to benefit from Grid computing. Bioinformatics research can be significantly boosted by utilizing a computing Grid shared across multiple academic institutions.

The project aims to enhance the local availability of bioinformatics services to facilitate the rapid access of local scientists and researchers to large bioinformatics data sets. By developing the needed applications and making these locally accessible, the project also hopes to contribute in improving research output of local bioinformatics experts.

The PSciGrid Portal, a web interface that enables a user-friendly way to access the Philippine e-Science Grid and the ASTI HPC facility, was developed. The project team deployed the OGCE Web portal. It comes with pre-existing portlets which were complemented with custom JSR 168-based portlets for searching the GenBank and for running applications using the Torque/OpenPBS job scheduler.

Also, through the project, a 3D Visualization facility was set up at ASTI that is intended for simulating molecular interaction, among others.

Seismic simulation of the 1990 Luzon Earthquake using SPECFEM3D-Globe

ICT for the Environment Program: R&D on Solutions, Applications, and Infrastructure

The ICT for the Environment Program targets to establish a nationwide environmental monitoring network and provide solutions for the prevention and mitigation of natural disasters. On a broader scale, this is expected to result to more timely and accurate generation of atmospheric data and forecasts by automating data acquisition and transfer, as well as provide cost-effective alternatives to existing technologies being utilized today. The projects under the Program are:

ICT Technologies for the Environment
(Left to right) Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy Prevention (PREDICT), Field Monitoring System (FMON), and Early Warning System for Tsunami (EWST)

EWST Deployment at Lubang Island, Occidental Mindoro

Project 1: Early Warning System for Tsunami (EWST), *Completed*

The project, which is a collaboration with PHIVOLCS, concluded in December 2009. Given that the Philippines is under threat of potentially devastating tsunamis, EWST aims to mitigate potential damage to life and property by providing timely and ample warning to areas which are projected to be affected by a tsunami.

The system features audio-visual warning stations that can be triggered using the nationwide cellular network. These alarm stations can be remotely activated and controlled thru a central server (equipped with a GSM modem) that is installed in PHIVOLCS, who first determines if a tsunami will indeed occur. Alternatively, the alarm can be triggered using cellphones with authorized numbers; or activated manually on site in case a problem occurred with the server or network.

The project also developed water level monitoring stations that would gather water level data and detect potential tsunami occurrences. The data are sent to a server for record keeping and analysis using the cellular network. A total of five (5) warning units and two (2) water level monitoring units were developed and produced. In coordination with appropriate authorities and PHIVOLCS, the units were deployed along coastal areas of: Barangay Bucana Ternate, Cavite; Barangay Sta. Mercedes, Maragondon, Cavite; Lubang Island; and Corregidor.

Project 2: Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy Prevention (PREDICT), *On-going*

This collaborative project between ASTI and PAGASA aims to develop low-cost and reliable stand-alone weather stations that would provide additional information which can be used for forecasts. Ultimately, this is expected to mitigate potential hazards related to extreme weather conditions.

The stations use cellular technology to transmit data and are designed for low power consumption, hence, the viable use of solar energy. The project has developed two (2) working prototype models. These models measure the following weather parameters:

- Model 1: Air Temperature; Humidity; Water Level; Rain Amount; Wind Speed & Direction; Solar Radiation; Solar Index
- Model 2: Air Temperature; Humidity; Atmospheric Pressure; Rainfall, Intensity, & Duration; Wind Speed & Direction

To ensure the accuracy of the data gathered, these models are currently being tested and calibrated prior to production. Deployment of the stations is scheduled in 2010.

Project 3: Field Monitoring System (FMON), *New*

The FMON project addresses the need to modernize the acquisition of pertinent agricultural information necessary for improved crop production. The system is made up of several field monitoring stations that are connected to a central server via a wireless network.

The monitoring stations use application-specific sensors, network camera, and wireless LAN modules to gather the required data. Information from these sensors can be used for basic environmental measurement, plant/animal monitoring, and farm observation. The multi-sensing system measures temperature, humidity, solar radiation, ground water level, and wind speed. Other sensors can be optionally added in order to support monitoring of soil moisture, leaf wetness, and ultraviolet radiation.

For this year, the project team has developed a working prototype, which is currently being tested prior to production. The deployment of a fully functional system is scheduled in 2010.

eDOST Program: Institutionalizing ICT within the DOST System

The eDOST Program primarily addresses the need to utilize and maximize ICT in improving the efficiency, productivity and collaboration among internal operations and front-line public services of the Department of Science and Technology (DOST) and its line agencies. The three-year program started on January 2008, and is on its second year of implementation. The three (3) projects being implemented under the program are:

eDOST Program
eDOST-INFRA, eDOST-INFOSYS, and eDOST-OPEN STANDARDS

Project 1: Upgrading of DOST ICT Infrastructure and Interconnectivity Network (eDOST-INFRA), *On-going*

The eDOST-INFRA Project aims to provide adequate and reliable infrastructure and interconnectivity among DOST agencies, regional, and provincial offices in order to improve their operations and service delivery. The main project components are organization-wide upgrading of the ICT infrastructure which includes ICT equipment, and Internet connectivity, especially the regional and provincial S&T centers of the Department; as well as training of technical personnel.

For this year, the project was able to facilitate the connectivity of regional

eDOST Infrastructure and Connectivity

eDOST Information Systems

eDOST Open Standards and Program & Change Management Component

and provincial DOST offices. DSL links to Regional Offices (ROs) and wireless internet service to Provincial Science and Technology Centers (PSTCs) were installed. For existing links, the project continued to maintain and improve network service and use. Likewise, ICT equipment of the DOST central, regional, and provincial offices were upgraded. Equipment such as desktop computers, laptops, and IP phones were deployed to the central and regional offices; while laptops were deployed to the PSTCs. A videoconferencing facility was also set up at the central office.

The project also conducted a series of trainings as part of the technology transfer strategy to sustain the network and increase staff productivity and effectiveness. The eDOST Network and Multimedia training was held on May 25-26 and June 1-2, 2009 at ASTI, participated by representatives from DOST agencies and ROs. The training aimed to equip the DOST offices' technical staff on basic network monitoring and tools, troubleshooting, and to impart basic knowledge on multimedia equipment and services.

For the succeeding year, the project team is expected to accomplish the following activities: upgrade remaining ICT equipment, reactivate the DOST-wide VoIP system and improve its reliability, conduct system administration trainings, and create a Network Administrator Consortia to maintain and sustain the network when the project ends.

Project 2: Upgrading and Development of DOST Information Systems (eDOST-INFOSYS), *On-going*

The eDOST-Infosys targets to upgrade and develop DOST-wide information systems that would contribute to improving DOST's effectiveness in performing its operations and delivery of service. The project team was kept busy with a series of training/workshops throughout the year, which were intended to ensure the adoption and effective development of information systems. A total of 499 DOST personnel coming from the CO, attached agencies, and ROs participated in the eight (8) training/workshops organized. The training/workshops were held in different venues in the NCR (ASTI, DOST CO), Luzon (Region I and IV), and Visayas (Region VI).

Topics covered for the training/workshops included Principles of Web Development, Basic Database Management, Web Security Training, Website Migration Training, Website Technical Documentation, Demonstration of DOST PerforMERS, and Presentation of Government R&D Information System.

The project has also started its data gathering for the development of the following information systems: (1) Philippine S&T Human Resource Information System, an online central repository of Filipino S&T personnel profiles (i.e., experts, scientists, engineers, researchers, etc.); (2) DOST Scholarship Online Information System, an online central repository of different DOST agencies' scholarship records intended as a management tool for regularly updating and synchronizing existing scholarship records; and (3) Government R&D Information System, a central repository for updating and monitoring government-funded R&D Projects.

Project 3: Program & Change Management and Implementation of Open Standards to DOST (eDOST-OPEN STANDARDS), *On-going*

The eDOST-Open Standards aims to ensure effective implementation of all project activities and the seamless adoption of the systems and infrastructure developed under the eDOST Program; as well as provide a complete open source desktop solution for DOST.

The project was able to develop a Transition Plan for adoption within the whole program. With the help of a Change Management Consultant, the project team was able to come up with a plan that provides a structured approach for DOST

in adopting the new network infrastructure and information systems developed under the program.

Another major accomplishment was the first release of Bayanihan Linux 5 for Government (BL 5 for Gov). BL 5 for Gov is a Linux-based complete desktop solution intended for government office use. Already included in the installation disc are various software applications such as an office productivity suite, Internet browser, multimedia tools, etc. Aside from the bundled software packages, the main feature of this distribution is the inclusion of common government form templates for OpenOffice.org. Towards the end of the year, the second revision of BL 5 for Gov was released with updated software packages and more common government form templates.

Major activities for the upcoming year include: conduct of software resources inventory for DOST; and the development of Open Document Format (ODF) Policy Document and its presentation to the DOST IT Policy Group.

Development of Interactive Science and Mathematics Courseware for Secondary Level Schools, *New*

The project is a joint undertaking of the Science Education Institute (SEI) and ASTI, and is a follow-up to the 2006 project Development of Interactive Science and Mathematics Courseware for Elementary Schools. SEI once again sought the collaboration with ASTI to come up with an e-learning project that will take advantage of information technology in conducting classroom lectures in high schools. This harnesses the full potential of information technology to be practical, socially-relevant, and accessible for the benefit of the Filipino student.

The project targets to produce 560 modules on Science and Mathematics for the Secondary Level. These are expected to be completed in 2012. The project team has started with the development of the modules. As of April 2009, 48 Mathematics and Science Secondary Level Modules have been completed. These modules passed through several review sessions conducted from August to November 2009. This activity helped the project team in improving different aspects in the module development such as the content of the lessons, graphics, interactive testing, etc. It also provided the team different perspectives about the initial output of the project to determine if the objective to uplift the students' imagination, creativity, and interest in education, is on track.

For the succeeding year, around 186 modules are targeted for development.

TACIS web portal
http://tacis.dost.gov.ph/client

Tests, Analyses and Calibration Information System (TACIS), *Ongoing*

TACIS is an eGov-funded project that was undertaken to develop an integrated information system that would enhance the operational capability of DOST's testing, analysis and calibration services. Its web portal <*http://tacis.dost.gov.ph/client/*> unifies all DOST attached agencies and ROs by providing interactive services that address not only customer support concerns but also laboratory management concerns on a 24x7 basis via the Internet. It also facilitates the processing of information to expedite the generation of test reports and calibration services.

The major project accomplishments for 2009 include the completion of system enhancements and bug fixes. Maintenance activities such as server synchronization, system implementation and promotion, and system administration were continued. These activities were likewise part of the regional project visits that the project team carried out.

The proponents of the project are: Food and Nutrition Research Institute (FNRI); Forest Products Research and Development Institute (FPRDI); Industrial Technology Development Institute (ITDI); Metals Industry Research and Development Institute (MIRDC); Philippine Nuclear Research Institute (PNRI); Philippine Textile Research Institute (PTRI); and 4 ROs (CAR, CARAGA, I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII).

Courseware for Secondary Level Schools

Knowledge Networking Towards Enterprising Agricultural Communities (K-AgriNet), *On-going*

The K-AgriNet program aims to usher in a shift from a resource-based to a knowledge-intensive and enterprising farm management by improving access to information and modern indigenous technologies through the use of ICT. ASTI is involved with the e-Consortia and e-Farm Components of the program, which is expected to provide the following deliverable to the Regional Consortia and FITS Centers: PREGINET connectivity; networking equipment; mobile Internet subscription; deployment and configuration of network technologies; and technology transfer and training.

For this year, the CVARRD office in Region II was finally connected. All 14 Regional Consortia and 80 FITS Centers are now connected to PREGINET. The links provided are either DSL, DDL/DLL via IP-VPN or wireless technologies.

The project team visited some Regional Consortia offices to conduct ocular inspection in order to document its link set-up, train technical staff on basic troubleshooting and escalation procedure; resolve link problems; and install network equipment such as VoIP. The team also participated in the RMIS Annual Meeting in Kalibo, Aklan. The discussions included the connectivity status, technical concerns, and extension plans for the project.

For 2010, the following project activities are lined up: site inspection of all active sites to conduct link checking, testing, and evaluation of the links and services provided by ASTI thru the project; come up with Policies, Guidelines and Escalation Procedures document; and finalize sustainability measures for the continuous link subscription of the Consortia.

K-AGRINET portal
http://www.pcarrd.dost.gov.ph/K-Agrinet

Multicast Experiment using the Wideband InterNetworking Engineering and Demonstration Satellite (WINDS) Project, *On-going*

The project is a collaboration between ASTI and the Japan Aerospace Exploration Agency (JAXA). WINDS was made to help facilitate collaboration-style distance education for regional conferences and lectures and the development of e-learning materials for human resource development, Information Technology (IT) engineers and instructional designers. Two (2) teleconferencing (Distance Learning and Research Discussion) via WINDS were held in the Philippines on March 27, 2009 and April 10, 2009. These teleconferencing sessions were participated by the University of the Philippines Diliman, Thailand's Chulalongkorn University, and Japan's Tokyo Institute of Technology.

Aside from Internet communication and e-learning advantages, WINDS also helps in disaster monitoring and management. The Sentinel Asia, a voluntary basis initiative led by the Asia-Pacific Regional Space Agency Forum (APRSAF) to support disaster management activity in the Asia-Pacific region, uses WINDS in disaster monitoring and fast data dissemination. The disaster organizations in the Philippines acquire information from Sentinel Asia with the help of ASTI since it operates the Sentinel's regional server in the Philippines.

In 2009, Sentinel Asia transmitted satellite image data of the flood around Mt. Pinatubo, as well as the Mt. Mayon eruption on December 25. Likewise, the National Disaster Coordinating Council (NDCC) and PAGASA conducted a seminar and workshop titled "Utilization of Space-Based Information During Tropical Cyclones Ondoy and Pepeng" and "Simple Data

ASTI International Partners
Japan Aerospace Exploration Agency (JAXA), EU-Southeast Asia Cooperation Project, (SEACOOP) European and Asian Grids (EUAsiaGrid)

Analysis of Temporal Satellite Imageries and Flood Hazard Map of Iloilo City and Vicinity," respectively. Both the seminar and workshop were under the Sentinel Asia Success Stories in the Philippines and were held last December 15, 2009 in Iloilo City.

Towards a Common e-Science Infrastructure with the European and Asian Grids (EUAsiaGrid) Project, *On-going*

The EUAsiaGrid Project, where the Philippines is one of the beneficiary countries, was initiated to pave the way towards an Asian e-Science Grid Infrastructure that is in synergy with the other European Grid initiatives in Asia. The EUAsiaGrid project intends to build on the European experience, particularly with the gLite middleware and EGEE infrastructure, in Asian countries. The project aims to contribute to the EU Research Infrastructures FP7 Programme of "promoting international interoperation between similar infrastructures, and reinforcing the global relevance and impact of European e-Infrastructures".

The Liknayan Cluster in ASTI's high performance computing (HPC) facility, which comprises seven (7) computing nodes, has been certified as EGEE production cluster on October 20, 2009. Applications for earthquake simulation (SPECFEM3D), and rainfall forecasting (Mesoscale Model 5) are installed in the cluster and are currently being ported to the Grid.

Focusing on the users in the Asian countries, the targeted activities of the project include needs assessment; awareness and dissemination; capacity building; and user communities-building. Fifteen (15) institutions, including ASTI, from 12 countries across Europe and Asia-Pacific are taking part in the EUAsiaGrid initiative.

EU-Southeast Asia Cooperation Project (SEACOOP), *On-going*

In 2009, several consortium meetings were held under the South East Asian Cooperation Project (SEACOOP) hosted by Bangkok and Indonesia respectively. Aside from this, ASTI also participated in several activities held under the project including the creation of the EU-SEA ICT Cooperation Network.

As a continuation of the forged agreement between ASTI and the European Communities Information Society, a Phase II of SEACOOP will be launched on January 2010, where the Philippines through ASTI, will continue to be a partner.

The Phase II project called "Support to Policy Dialogues and Strengthening with Southeast Asia or SEALING". The project aims to support the development of Information Society policy dialogues and to strengthen cooperation on ICT research between the ASEAN countries and the European Union. The focus of the upcoming project will be the following: organization of cooperation events and policy dialogue meetings; identification and analysis of ICT policy and research priorities; development of synergies through dialogues and other cooperation activities; and development of promotion, dissemination and awareness-raising activities. The project is supported by the European Commission (EC) and the Association of the Southeast Asian Nation Secretariat, and coordinated by Sigma Orionis.

Very Large Scale Integration (VLSI) Testing Seminar Project, *Completed*

The VLSI Testing Seminar Project concluded in April 2009. The project, which is funded by the Japan-ASEAN General Exchange Fund (JAGEF) and managed by the ASEAN Sub-Committee on Microelectronics and Information Technology (SCMIT), officially started in May 2008.

With ASTI as the lead implementing institution, the project was able to achieve its objectives through the accomplishment of the following deliverable: (1) database of VLSI Testing experts in the ASEAN and Japan; (2) course materials on VLSI Testing and seminar-workshop on VLSI Testing for ASEAN member countries; and (3) feasibility study report on setting up a VLSI Testing facility/center within ASEAN.

The first project output is expected to facilitate the establishment of a tight network of VLSI Testing professionals in the ASEAN region and Japan for possible future cooperation and collaboration in the field of VLSI Testing. The second deliverable is anticipated to contribute mainly in the enhancement of VLSI Testing education by integrating VLSI Testing as an elective course in the curricula of the respective universities who participated in the seminar. The final output laid the framework on how to move forward and further address the need to enhance the skills and capabilities of test and quality assurance engineers in the Southeast Asian region. It is anticipated that the establishment of the proposed ASEAN VLSI Testing Network will facilitate the pooling of resources and expertise as well as the sharing of information and training resources among the ASEAN member countries.

The success of this project is a vital step for the ASEAN member countries as they cooperate to sustain the growth

of the microelectronics industry in the region by strengthening the capability of member countries in providing back-end semiconductor services; and eventually bridge the gap between the current manufacturing activities and the higher value integrated circuit (IC) design activities

Upgrading of Facilities of the DOST Research and Development Institutes in Support to Research and Development (R&D) and Scientific and Technological (S&T) Services, *On-going*

In the pursuit of upgrading the facilities of the DOST's research agencies, the project continuously provided advanced equipment and maintained the existing equipment and laboratories to support excellent R&D and S&T service delivery.

In its third year of implementation, the project started the upgrading of the Open Source and Grid Laboratories. The Open Source Laboratory acquired software licenses that will enable software benchmarking and graphic development. Meanwhile, the Grid Laboratory obtained computing nodes, 12TB Adaptable Modular Storage, server rack, and other computing facility peripherals to enable more reliable grid computing. The laboratory also obtained pen tablet for graphic designing and marketing purposes.

The project's Year 3 is also the continuation of upgrading the Embedded and PREGINET Laboratories which started in 2008. The Embedded Laboratory acquired RFID System Development Kit and Robotic Development Kit for prototyping and embedded systems designing. It also acquired Pro-E CAD and Desk Proto Full CAM which are used for industrial designing. The additional laboratory fittings that the laboratory obtained will enable advanced testing of circuit boards and components as well as 2D/3D design analysis and modeling which are very useful for product conceptualization and realization. On the other hand, the PREGINET Laboratory received rack mounted servers to further improve its web hosting and video streaming services. Some of the procured equipment like the media converters will enhance the network's capacity to interconnect PREGINET partners. In improving the uptime of the network in times of power outages, a big investment was made on PREGINET's power continuity system for its Network Operations Room.

The Open Source, Grid, Embedded and PREGINET Laboratories were given more books for reference and further reading which are helpful in enhancing the staff knowledge. The four laboratories together with the Research and Development (R&D) Division received additional office equipment and furniture to improve the work output and working environment.

DOST-PEZA Open Technology Business Incubator at the UP Technology Park Complex, UP Diliman

Microelectronics and Embedded Systems Research and Development

Establishment of the DOST-PEZA Open Technology Business Incubator (DOST-PEZA Open TBI), *On-going*

The Department of Science and Technology, together with the Philippine Economic Zone Authority and in collaboration with the University of the Philippines established the DOST-PEZA Open Technology Business Incubator (DOST-PEZA Open TBI). This was formally launched on July 22, 2009.

Under the guidance of an 11-member Steering Committee, the DOST-PEZA Open TBI strives to (1) encourage the creation and growth of innovative ICT entrepreneurs; (2) promote the adoption and commercialization of open technologies; and (3) provide a medium for the industry-academe-government collaboration and synergy. The facility can house 20 budding business in ICT and electronics. Priority is given to start-ups that delve in open source technologies.

Managed by the Technology Resource Center and assisted by ASTI, the DOST-PEZA Open TBI offers data hosting, marketing guidance and Intellectual Property assistance among other services. Proprietors can choose between 20 and 40 sqm. rooms or a combination thereof; which are inclusive of 24x7 security service, commodity Internet and VoIP.

Local companies that have chosen to locate at the DOST-PEZA Open TBI include: Convergelink IT Solutions; GraPhiKos Solutions; Philippine Open Source Distribution; Ser-BIZ-Yo International Co., Ltd.; Xinyx Design Consultancy and Services, Inc.; Lean Technology Management, Inc.; Crisiantweb Development; East Asia Technologies; Lightdbox Animation Studio; Unlimited Technologies, Inc.; and Module 01, Inc.

Embedded Technology Products
(Left to right) Digital Wood Moisture Meter, GSM/GPRS Data Acquisition, PICMe Microcontroller Kit, GSM Data Terminal (USB Interface), GSM Data Terminal, Digital Multimeter

Embedded Systems Development, *On-going*

The following embedded systems products developed by ASTI were commercialized this year:

GSM Data Terminal

The GSM Data Terminal is a solution designed to convert an ordinary PC into an SMS server. It is a package that consists of a GSM modem card and an SMS software. The applications developed using this technology can communicate with any SMS-capable device, and automate the handling of all incoming and outgoing messages and other data related to the client's information system.

Several government departments and agencies such as the Department of Agrarian Reform's Information Technology Center for Agrarian and Fisheries, and the Department of Environment and Natural Resources' Environment Management Bureau; as well as private companies like Upscaled Food Inc.; Tuloy Pinoy Organization; and CORE8 International Marketing Corporation, currently use the GSM Data Terminal to aid them in more efficient and effective implementation of tasks such as information dissemination and data gathering.

PICMe Microcontroller Starter Kit

The PICMe Microcontroller Starter Kit provides students, engineers, and hobbyists with a low-cost preliminary tool to explore the power of a microcontroller unit and jump-start their prototyping and product development projects on embedded systems.

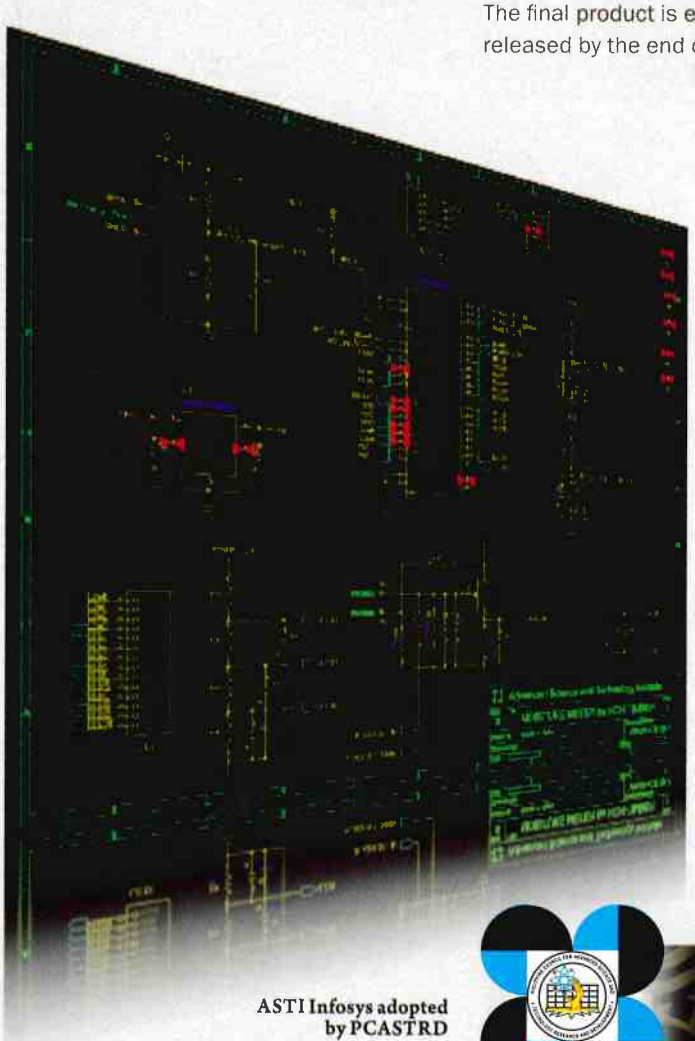
PICMe is pocket-sized, measuring 3.7" x 1.65", and contains a powerful MCU with a dual function header. It is easy to reprogram, allowing fast error checking, and comes with a pre-installed PIC boot-loader.

Development and Commercialization of Locally Designed Digital Wood Moisture Meter for Bamboo and other Non-timber Forest Products (DWMM for Bamboo), *On-going*

The main project deliverable is a low-cost and handy tool for measuring the moisture content of non-timber forest products. The project, jointly implemented with FPRDI and Alexan, is a follow up to the DMM designed for timber forest products, which was well-received by the local woodworking industry and is already commercially available.

On its first year of implementation, the team did a revision on the meter's circuitry. LCD design and fabrication were completed. And board design and casing were revised.

The final product is expected to be released by the end of 2010.



DWMM for Bamboo schematic

Contract Research

Adoption of ASTI-Developed Information Systems by the Philippine Council for Advanced Science and Technology Research and Development, *Completed*

The Philippine Council for the Advanced Science and Technology Research and Development (PCASTRD) adopted the Procurement and Inventory module of the ASTI-developed Information System. The three-month project involved the customization of the Procurement and Inventory module suited to PCASTRD's business process and policies.

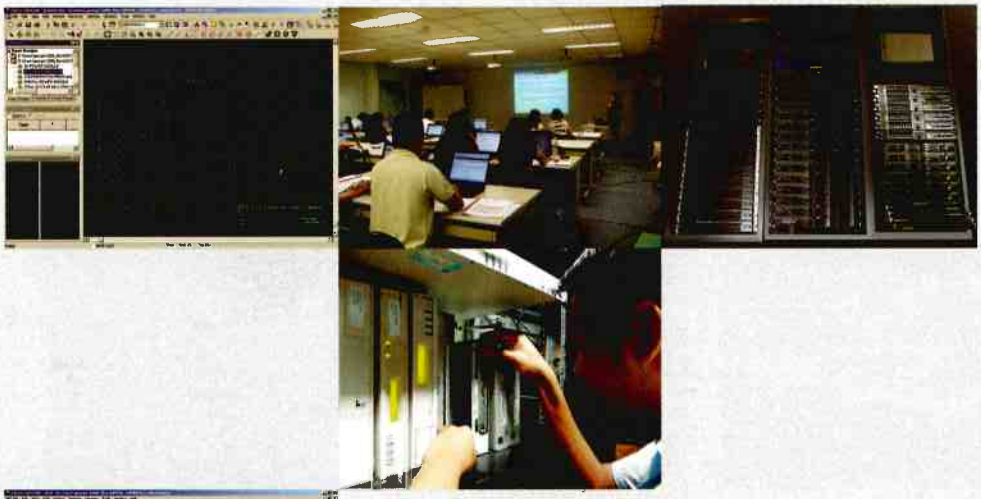
The sub-modules that comprise the Procurement and Inventory module are:

- Supplies Inventory System, which allows the user (Supplier Officer) to monitor the organization's office supply and generate reports;
- Equipment Inventory System, which handles the inventory of equipment and monitoring of Acknowledgment Receipt of Equipment (ARE) issued to staff;
- PR Form Generator, which is used to input Purchased Requests (PR);
- ITB Form Generator, which allows users to create and generate the Invitation to Bid (ITB) Form. Specifications of the PR indicated in the PR Form Generator is linked to this system; and
- Abstract of Bids and Canvass Form Generator, which automates the creation of the Abstract of Bids and Canvass form. Specifications of items for procurement stated in the ITB Form Generator is inherited by this system.

A training was conducted for PCASTRD staff on how to use and administer the system. The system was turned over to PCASTRD on September 9, 2009. ASTI09

ASTI Infosys adopted by PCASTRD

Advanced Science and Technology Institute
Information System
moving beyond possibilities



MFO 2 – Technology Transfer Services

Technology Commercialization

The commercialization activities of the Institute in 2009 centered on the following IT and electronic products and solutions:

- GSM Data Terminal
- PICMe Microcontroller Starter Kit
- Digital Multimeter
- Digital Wood Moisture Meter
- Bayanihan Linux 4.0
- ASTI Information System Modules

Majority of the 511 clients who acquired the said R&D outputs were private companies engaged in furniture manufacturing. There were also some clients from government agencies and different universities. These commercialization efforts had generated a total of Php264,761 income for the Agency.

Eight (8) technology transfer agreements, primarily on the commercialization of GSM Data Terminal Kits, were signed.

Technology Diffusion

The Bayanihan Linux, and the Science and Mathematics Courseware led the technology/product offerings of the Institute, as far as diffusion initiatives are concerned. Based on monitoring data, majority of the 7,682 clients from government, industry, and academe bought, copied, or downloaded copies of these software.

Other diffusion activities carried out include product presentation, demonstration and launching, and participation in technology exhibits. Additional ASTI products, technologies, facilities, and services that were presented and offered were DOST-PEZA Technology Business Incubator, PREGINET infrastructure and services, TEIN 3, Wood Moisture Meter, PICMe Microcontroller Starter Kit, GSM Data Terminal, and ASTI Information System Modules. ASTI09

MFO 3 – Science and Technology (S&T) Services

Technical Services

Philippine Research, Education, and Government Information Network (PREGINET)

ASTI continues to manage and operate PREGINET, the country's national research and education network (NREN) with direct links to international research and education networks (RENs) such as the Asia Pacific Advanced Network (APAN), and the Trans-Eurasia Information Network 3 (TEIN 3). These connections facilitate technology exchange and international research collaboration. PREGINET also provides other value-adding services such as Internet connectivity; voice over IP (VoIP); webhosting; server co-location; network design; network monitoring and management; site mirroring; technical consultancy and support; and multimedia over IP such as video conferencing and video streaming.

PREGINET continues to support Telemedicine in the Philippines through its collaboration with the UP-PGH and the National Telehealth Center. PREGINET provides regular technical support to UP-PGH during live surgery demonstrations arranged by the Medical Technical Working Group of APAN, including the 29th APAN Meeting on February 11, 2010 held in Sydney, Australia.

PREGINET nationwide links and partnerships

PREGINET also handled the network requirement during the 2009 Asia Pacific Regional Internet Conference on Operational Technologies (APRICOT) hosted by the Philippines through ASTI and DOST. It was the second time for the country to host the APRICOT, which was first done in 1998. The event is a venue for network operators and engineers across the Asia Pacific region to converge and discuss and provide solutions to current Internet operational issues, and set the direction for the growth of the Internet and related technologies in the region.

PREGINET also handled local arrangements for online participation of partner-institutions in e-learning courses such as "National Level HIV/AIDS Impact, Country Situation and Experiences" organized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and School-on-the-Internet Asia (SOI Asia).

In terms of connected partners, a number of UP campuses joined the network this year, including: UP Manila, UP Visayas Cebu College, UP Diliman, UP Los Baños,

and UP Miag-ao. PREGINET continues to actively promote, advocate and enhance its services to better serve its partners and attract more government, academic and research institutes to join the network or collaborate on network or research undertakings.

Domain Name System (DNS) Administration

ASTI administers and maintains the .gov.ph domain. Existing and prospective clients access the .gov.ph Domain Registry site either to: apply for a new .gov.ph domain; request for modification of their .gov.ph domain; or request for deletion of their .gov.ph domain.

For 2009, the .gov.ph domain administrators were able to process a total of 857 online transactions. Seventy three (73) of these transactions were applications for new .gov.ph domain name, which were all approved; 290 were requests for domain modification; and 356 were requests for deletion so that the organization can apply for a new domain name.

Requests for log-in information and inquiries from the .gov.ph domain subscribers regarding administration of the domain delegated to their organizations were addressed via e-mail and telephone. These transactions totaled to about 55.

Currently, the service is free of charge. Clients being accommodated are government institutions and organizations, following the Philippine Government Internet Policy and Guidelines posted at the DNS website. To date, a total of 1,961 domains are being maintained by ASTI.

gov.ph Domain Name System (DNS) Administration

gov.ph Registration

Training Services

The ASTI Training Unit conducted a total of 37 trainings for 2009. Majority of these covered topics on Network Management, Network Security, Internet Routing, and Internet Protocol version 6 (IPv6). The distribution of the total number of participants according to sector is as follows: 30% Government, 6% Academe, and 64% Industry *(Table 1)*.

Table 1. Distribution of participants according to sector

Training	Government	Academe	Industry	Subtotal
APRICOT 2009 Manila	110	38	485	633
Network & Multimedia Training	15	0	0	15
	25	0	0	25
Presenting with Power	30	0	0	30
MySQL for Beginners	3	8	3	14
Bayanihan 5 for Desktop Users	10	0	0	10
Internet Governance Forum (Remote Participation)	1	0	3	4
Open Office Training and Open Source Migration Lecture	15	0	0	15
Benchmarking and Capability Assessment for IT Equipment	20	0	0	20
TOTAL	229	46	491	766
Percentage	30%	6%	64%	100%

ASTI generated a gross income of Php4,227,834.66 from the above trainings. The bulk of said income came from registration fees of the 14th APRICOT 2009 Manila. ASTI also organized four (4) trainings for free, which covered topics on Network and Multimedia, Internet Governance, and Presenting with Power *(Table 2)*.

Table 2. Summary of training activities conducted in 2009

Training	Date Conducted	Venue	No. of Participants	Income
APRICOT 2009 Manila	Feb 18 to 27	Sofitel Philippine Plaza	633	PHP 4,040,288.66 from registration fees
Network & Multimedia Training	May 25 to 26	ASTI Training Room	15	PREGINET sponsored
	Jun 1 to 2	ASTI Training Room	25	PREGINET sponsored
Presenting with Power	Sep 18	ASTI Training Room	30	ASTI Funded (Free)
MySQL for Beginners	Sep 23 to 24	ASTI Computer Lab	14	PHP 66,500.00 from registration fees
Bayanihan 5 for Desktop Users	Oct 22	ASTI Computer Lab	10	PHP 2,750.00 from registration fees
Internet Governance Forum (Remote Participation)	Nov 16 to 18	CSD Conference Room	4	ASTI Funded (Free)
Open Office Training and Open Source Migration Lecture	Nov 16 to 19	ASTI Computer Lab	15	PHP 76,500 paid by DOJ-PPA
Benchmarking and Capability Assessment for IT Equipment	Nov 27	ASTI Training Room	20	PHP 41,796.00 paid by CICT
TOTAL			766	PHP4,227,834.66

Training conducted at the ASTI Training Room

Major ASTI Training and Event Partnership

ASTI, in collaboration with the Asia & Pacific Internet Association (APIA), Asia Pacific Network Information Centre (APNIC) and 28 other local and international partner agencies, organizations, and offices, successfully hosted the 14th APRICOT 2009 Manila. The 10-day event generated a total of 633 attendees from 44 participating economies. APRICOT 2009 Manila consisted of workshops, tutorials, seminars, and forums, all with the goal of "spreading and sharing the knowledge required to operate the Internet within the Asia Pacific region" (*see Table 3 for a list of the workshops, tutorials, and sessions*).

The trainings provided by ASTI achieved a very satisfactory (VS) rating based on the post-training evaluations/feedback. Averaged summary evaluation is as follows: Speaker/Instructor rating at 55.08%, Training Coursework at 52.20% VS, Laboratory Exercise at 50.41% VS, Course Material at 48.22% VS, and 47.74% VS on Support Services, Facilities, and Food (*Table 4*).

The number of training conducted in 2009 increased by 345% from the previous year. The annual gross income also increased significantly by 884% (*Table 5*). This is attributed to the staging of the APRICOT 2009 Manila and the offering of new training modules such as MySQL for Beginners, and Benchmarking and Capability Assessment of IT Equipment.

Table 3. Workshops, tutorials, and sessions in APRICOT 2009 Manila

APRICOT 2009 Manila	Session
Workshops	Network Management
	VoIP Deployment
	Network Security
	ISP Routing using IPv4 and IPv6
	Advanced Routing - BGP Multihoming with IPv4 and IPv6
Tutorials	Internet Routing Registry
	Introduction to IPv6
	BGP Multihoming Techniques
	Network Core Infrastructure – Best Practices
	Layer 2 Attacks and Mitigation Techniques
	Anatomy of a Network Attack, Network Forensics, Network Attack and Defense
	Ipv6 Deployment
	ISIS Deployment
	DNSSEC Deployment
	DNSSEC in 6 Minutes
	MPLS Best Practices
	MPLS-Based Metro Ethernet Services

APRICOT 2009 Manila	Session
Sessions	Opening Plenary
	Closing Plenary
	APOPS Plenary I – IPv6 Operations
	APOPS Plenary II – IPv6 Transition
	Internet Exchanges
	Technology Developments
	Security
	Philippine Internet Industry
	Routing
	DNSSEC
	Open Source Registry
	Peering

Table 4. Summary of training evaluations

Criteria	Needs Improvement	Unsatisfactory	Satisfactory	Very Satisfactory	Excellent
Speaker/Instructor	0%	0.22%	12.36%	55.08%	32.97%
About the training	0%	1.38%	21.50%	52.20%	23.21%
About the laboratory exercise	0%	0.56%	18.72%	50.41%	19.65%
Course Material	0%	1.99%	23.56%	48.22%	23.57%
Support Services, Facilities, and Food	0.2%	1.67%	18.99%	47.74%	31.59%

Table 5. Summary of trainings for 2007-2009

Year	No. of Trainings	Annual Generated Income
2007	23	P721,155
2008	11	P478,0t07
2009	37	P227,834.66

Keio University

JAXA APN

Foreign and Local Linkages

ASTI continues to strengthen existing linkages with partner institutions and forge additional partnerships through collaborative R&D projects and activities with the following consortia, institutions and organizations:

Foreign Linkages

Asia Pacific Network Information Centre (APNIC)

In line with ASTI's hosting of the Asia Pacific Regional Internet Conference on Operational Technologies (APRICOT), a collocated meeting by the Asia Pacific Network Information Centre (APNIC) was also held in Sofitel Philippine Plaza from February 23 to 27, 2009.

Seven policy proposals were discussed in the meeting, the most prominent of which is the IPv6 migration of countries allocated by APNIC with IPv4 addresses, and several binding issues such as IPv4 address transfers, and Global policy proposal for the allocation of IPv4 blocks to Regional Internet Registries.

APNIC also signed separate Memorandum of Understandings (MoU) with ASTI; and the Philippine Network Operator's Group (PhNOG), of which ASTI is also an active partner and collaborator.

APNIC is an open, membership-based, and non-profit organization. As one of the five Regional Internet Registries (RIRs), it is in-charged with the fair distribution and responsible management of IP addresses and related resources to support the operation of Internet globally. ASTI and APNIC continuously undertakes collaborative activities on trainings, establishment of Internet exchange, and other initiatives on Internet operation and management as part of its MoU.

Ministry of Agriculture, Forestry and Fisheries Information Network (MAFFIN), Japan

Japan's MAFFIN provides online hosting to a number of agriculture, forestry and fishery organizations in different countries. MAFFIN operates together with the Asia-Pacific Advanced Network (APAN) in order to replicate and disseminate data.

Since 2004, ASTI has been the direct termination point in the Philippines of the Japan-PH MAFFIN/APAN link. Through this link, a number of research and education endeavors in the country have been facilitated. These include access to crucial data used in typhoon tracking as well as distance lectures and education initiatives conducted between Philippines and foreign universities. The Philippine participation in international conferences, symposia, fora, and workshops through videoconferencing and establishment of Access Grid facilities were made possible because of this link.

MAFFIN continuously provides funding support for the maintenance of the Philippines' link to APAN. Presently, the link is at 155 Mbps and ASTI is anticipating an increase of the link's capacity to handle more content and facilitate more collaborative activities.

Asia-Pacific Advanced Network (APAN)

ASTI collaborates with APAN in research, development, and deployment of advanced networking technologies and applications for agriculture, natural resources, disaster management, and distance education, among others. ASTI is an active member of APAN and regularly participates in APAN meetings and conferences. The APAN Meetings are Asia Pacific's foremost event for showcasing advanced broadband network applications and technologies for research and education.

In 2009, ASTI was able to attend the two (2) APAN meetings on March 2-6, 2009 held in Kaohsiung, Taiwan, and July 20-23, 2009 held in Kuala Lumpur, Malaysia. Both meetings conducted tutorials, oral presentations and demonstrations that covered advanced network technologies and applications.

APAN is a non-profit international research and education network which aims to facilitate and coordinate the development, deployment, operation, and technology transfer of advanced network-based applications and services in the research and education community within the Asia-Pacific Region. ASTI, as the representative of the Philippines, has been a primary member of APAN since 2003.

Keio University, Japan

ASTI's partnership with Japan's Keio University dates back to 1998, when the Institute started to participate in the Asian Internet Interconnection Initiatives (AI3). AI3 is an international research consortium that aims to develop cutting-

edge technologies for the Internet which include IPv6, multimedia communication mechanism, and advanced Internet applications. It facilitates the development of knowledge-based information infrastructures in the Asian region.

The collaborative activities between ASTI and Keio University include joint research activities, exchange of scientific information, mutual visits of researchers, and participation in seminars and conferences organized by the respective institutions, among others. ASTI has also been participating in the Keio University-led initiative School-on-the-Internet Asia (SOI Asia) since 2003. SOI-Asia is a project that aims to contribute to higher education development in Asian countries via distance learning system breakthroughs by utilizing the AI3 infrastructures.

ASTI's connection to the AI3 network allows the Institute and its PREGINET partners to conduct network-based applications like IPv6, videoconferencing and video streaming, VoIP, and e-learning. With its partnership with AI3/SOI-Asia, ASTI, in 2009, became a member of CONNECT-Asia (COllaboration for Network eNabled Education Culture, Technology and science), a UNESCO initiative that actively contributes to the development and improvement of research and education in the Asia and Pacific.

ASTI participated in SOI-Asia special lectures in 2009 including, the Biotechnology Special Lecture Series, Trends in Mobile Networking, and Networked RFID Fundamentals. Furthermore, ASTI attended the 2009 AI3/SOI-Asia Spring Joint Meeting in Kathmandu, Nepal and the 2009 AI3/SOI-Asia Biannual Meeting in Penang, Malaysia. ASTI also became part of SOI-Asia's Special Events and Real Time Sessions titled Robot Camp 2009 in Cambodia - UNESCO Science and Technology Camp; and Multi-disciplinary Hazard Reduction Program from Earthquakes and Volcanoes in Indonesia Kick-Off Workshop.

Trans Eurasia Information Network 3 (TEIN3)

TEIN 3 was launched in the Philippines on February 25, 2009, during the APRICOT 2009 Manila. At present, the country has 45 Mbps direct connectivity to TEIN3 via Hong Kong. This link facilitated more research and education activities between PREGINET partners and its international partner institutions. ASTI maintains its active participation by attending TEIN3 trainings and workshops. ASTI attended two (2) workshops in 2009, the TEIN3 Kick-off Workshop held in Thailand on June 15-19; and the Multicast Workshop held on November 2-4.

TEIN3 is the third-generation Trans-Eurasia Information Network, which provides large-scale research and education data-communications network for the Asia-Pacific region. Its purpose is to extend and encourage research and education IP connectivity, linking Asia-Pacific researchers to each other and to their counterparts in Europe. TEIN3 does this via fast, direct links to Europe's multi-gigabit GÉANT2 network, providing the Asia-Pacific countries with a gateway for global collaboration.

The Philippines' participation in the TEIN initiative started with TEIN 2 in 2004. The Philippines acquired its 10 Mbps connectivity to TEIN2 through ASTI's PREGINET in March 2006.

Japan Aerospace Exploration Agency (JAXA)

JAXA is Japan's national aerospace agency and is responsible for the research, development and launching of satellites. ASTI's collaboration with JAXA concerns the implementation of the research project WINDS. The said collaborative research experiment was undertaken to verify the function and effectiveness of the WINDS satellite.

Local Linkages

Various local linkages with research and education institutions, government agencies, and private companies were established in 2009. Most notable of which are those new partnerships forged in relation to PREGINET connectivity and services. These include the following:

- University of the Philippines Manila
- UP Manila National Telehealth Center
- University if the Philippines Los Baños
- Ateneo de Manila University
- Provincial Government of Camiguin

Organizational Learning and Development

Knowledge Management

For 2009, the Knowledge Management Division scaled up its programs, projects, and activities to promote knowledge sharing, learning, continuous improvement, and innovation within the organization. These included the following:

- Establishment of policies to promote knowledge capture through institutionalization of knowledge-based exit interviews, turn-over processes, and documentation.
- Establishment of Project Management Communities of Practice and identification of Knowledge Coordinators.

Screenshot of the ASTI Information System

- Conduct of knowledge management audit.
- Conduct of knowledge sharing sessions.
- Collection and dissemination of technology/market intelligence bulletins.
- Development and enhancement of KM systems, tools, and job aids. Conduct of KM awareness seminars and capacity building.

With the approval of ASTI's Rationalization Plan, the KMD is looking forward to further scaling up its programs, projects, and activities, and looking to provide KM for client services (trainings, solutions, and consultancies).

Management Information Systems

The Management Information System is a unit under the Knowledge Management Division of ASTI. Its functions are to provide technical support to staff and to develop and maintain ASTI's Information System (ASTI Infosys).

Providing technical support to staff involves PC troubleshooting for both hardware and software, providing updates, set-up, and configuring newly acquired PCs for staff use. As for the development and maintenance of ASTI's Infosys, MIS was able to develop new system tools to aid the staff in with their daily tasks and functions. These new systems are:

1. *ePerformance and Evaluation System.* This is a system that allows online evaluation of the staff based on their work targets and performance. Both the evaluatees and evaluators are notified by the system through Email of accomplished and pending evaluation requests. The system includes automatic computation of the staff's numerical and adjectival ratings.

2. *Abstract of Bids and Canvass Form Generator.* The Abstract of Bids and Canvass Form Generator allows the BAC secretariat to create an Abstract of Bids and Canvass for a particular item for purchase online. The system aims to systematize the generation of Abstracts of Bids and Canvass Form for uniformity and easier monitoring. It allows online approval of Abstract of Bids and Canvass, also capturing abstract of bids and canvass which have been approved/disapproved by the BAC Committee. The data

displayed (e.g. specification of an item for purchase), is inherited in the ITB Form Generator System

3. *Projects Database.* The Projects Database is a repository of previous projects and projects currently being undertaken by the agency. The system allows the user to easily generate reports requested by the PES and other organizations in need of the data. The data captured in this system is synchronized with DOST Performers System developed through the eDOST Infosys Project. The team also enhanced some modules to improve the users' experience in using the ASTI Information System as well as for the ease in management and administration.

The modules that were enhanced are the following.

1. *Leave Application.* The Leave Application underwent modifications to include an automatic computation of leave credits. Before the changes, manual inputing left errors to the application process. With these changes, automatic computation provide users of their leave credits in real-time. Also, the approval of leave applications was modified according to new agency policies

2. *Transportation Reservation System.* The Transportation Reservation System underwent further enhancements as well. Bug problems were corrected and a Trip Ticket Form Generator module has been added. A Trip Ticket can now be automatically generated based on approved transportation requests made.

The team also started its efforts to reengineer the whole ASTI Infosys. Since the start of its development in 2001, ASTI Infosys has evolved into a complex system of various processes. Although, the system used are the same front end and backend applications, newer technologies and applications have been emerging triggering the team to upgrade and reengineer the system to be at par with other information systems being developed.

Moreover, the ASTI Infosys Database needed a shift to a more structured and flexible system. The upgrading involved modification of codes and scripts, and the application of new software development tools utilizing a standard coding technique. The system also has been facelifted to a more user friendly and easy in the eye environment.

Currently, the team is working on other major modules in the ASTI Infosys as such the Personnel Management Information System. It is expected that the reengineering will be completed by 2010.

Process Development

The Advanced Science and Technology Institute, as one of the research and development Institute of DOST, pursued ISO 9001:2000 Certification in compliance with the implementation of the DOST-GIA-funded project entitled "Establishment and Implementation of Quality Management System (QMS) in Accordance with ISO 9001".

At the start of its implementation, two certification audits were performed, namely the Document Review and the Certification Audit proper which was conducted by the Certification International Philippines Inc. (CIPI). Key findings and recommendations were revealed in the audit, however, in its effort to comply with the standard, ASTI completed the necessary modifications in its processes.

ASTI later was accorded its certification under ISO 9001:2000 for the "Provision of innovative solution using information and communication technology through research and development, technology transfer and S&T services" on March 18, 2009.

The first run of Internal Audit was held on June 15 to 16, 2009 which covered the areas as follows:

1. Quality Management Representative
2. Management Information Systems
3. Human Resources
4. Training
5. Purchasing
6. Billing and Collection
7. Maintenance
8. Internal Audit Team
9. Top Management
10. Document Custodian
11. Four (4) R&D Divisions
    a. Microelectronics Division (MED)
    b. Communications Engineering Division (CED)
    c. Special Projects Division (SPD)
    d. Computer Software Division (CSD)

The QMS Management Review followed in October to verify if QMS has indeed achieved expected outcomes in accordance to its established procedures. The session also assessed the findings in the internal audit and identified key areas of possible issues that may recur. It emphasized the importance of customer satisfaction measurement, quality plans, and possible improvements.

In-house trainings for the Quality Management Representative, Document Custodian, and Head of the Internal Audit Team was conducted from July 15 to 17 at the Metals Industry Research and Development Center in Taguig. The lecture and workshop was presided by Engr. Constante Almuete of the Neville Clark International.

The surveillance audit is seen to be conducted on February 2010. Since, the validity of the ISO 9001:2000 certification is until November 2010, ASTI is prepping for the Transition audit on the second or third quarter next year. Further, a Gaps Analysis Workshop was held for the transition from ISO 9001:2000 to ISO 9001:2008 conducted September 23, 2009. The highlights were: 1) Review of scope and exclusions; 2) Review of responsibilities and authorities; 3) Review of business process; 4) Review of six (6) mandatory procedures; 5) Review of handling customer complaints; 6)Review of QMS policy; and 7) Review of quality objectives.

Rationalization Plan

Background

In an effort to make the government effective notwithstanding its limited resources, President Gloria Macapagal-Arroyo signed Executive Order (EO) 366 on 04 October 2004. With its implementing rules and regulations signed on 11 May 2005 by then DBM Secretary, the late Emilia T. Boncodin, Departments under the Executive Branch were directed to take a strategic review of their operations and organizations.

Through EO 366, ASTI prepared its Rationalization Plan (RP) with the objective of focusing its efforts and scarce resources on its vital/core functions, improve its quality of services by eliminating overlaps and duplication and improving its performance by rationalizing its service delivery and support systems, and organization structure and staffing.

New ASTI Organizational Chart

ASTI was rationalized, structurally and functionally, effective upon the approval of its RP on 10 June 2009. Under said plan, the Institute shall continue to pursue its mandate of providing strategic support for the requirements of the local information and communications technology and electronics industries, developing local capacity in microelectronics and information technology, and transferring the benefits of these technologies to local beneficiaries in consonance with its commitment of contributing significantly to the community, academe, industry and the government.

Organizational Changes

The Institute is still headed by a Director IV (SG 28) item but is no longer assisted by a Director III (SG 27) position. The said position was abolished pursuant to the internal guidelines set by the Department of Science and Technology (DOST) Change Management Team that agencies with less than 100 personnel should no longer have a Deputy Director position.

Structurally, the Institute maintained its six (6) divisions: Office of the Director (OD), Finance and Administrative Division (FAD), Communications Engineering Division (CED), Microelectronics Division (MED), Computer Software Division (CSD), and Special Projects Division (SPD). The only organizational modification is the renaming of the three (3) technical divisions: CED to Solutions and Services Engineering Division (SSED); MED to Research and Development Division (RDD); and SPD to Knowledge Management Division (KMD).

Staffing Modification

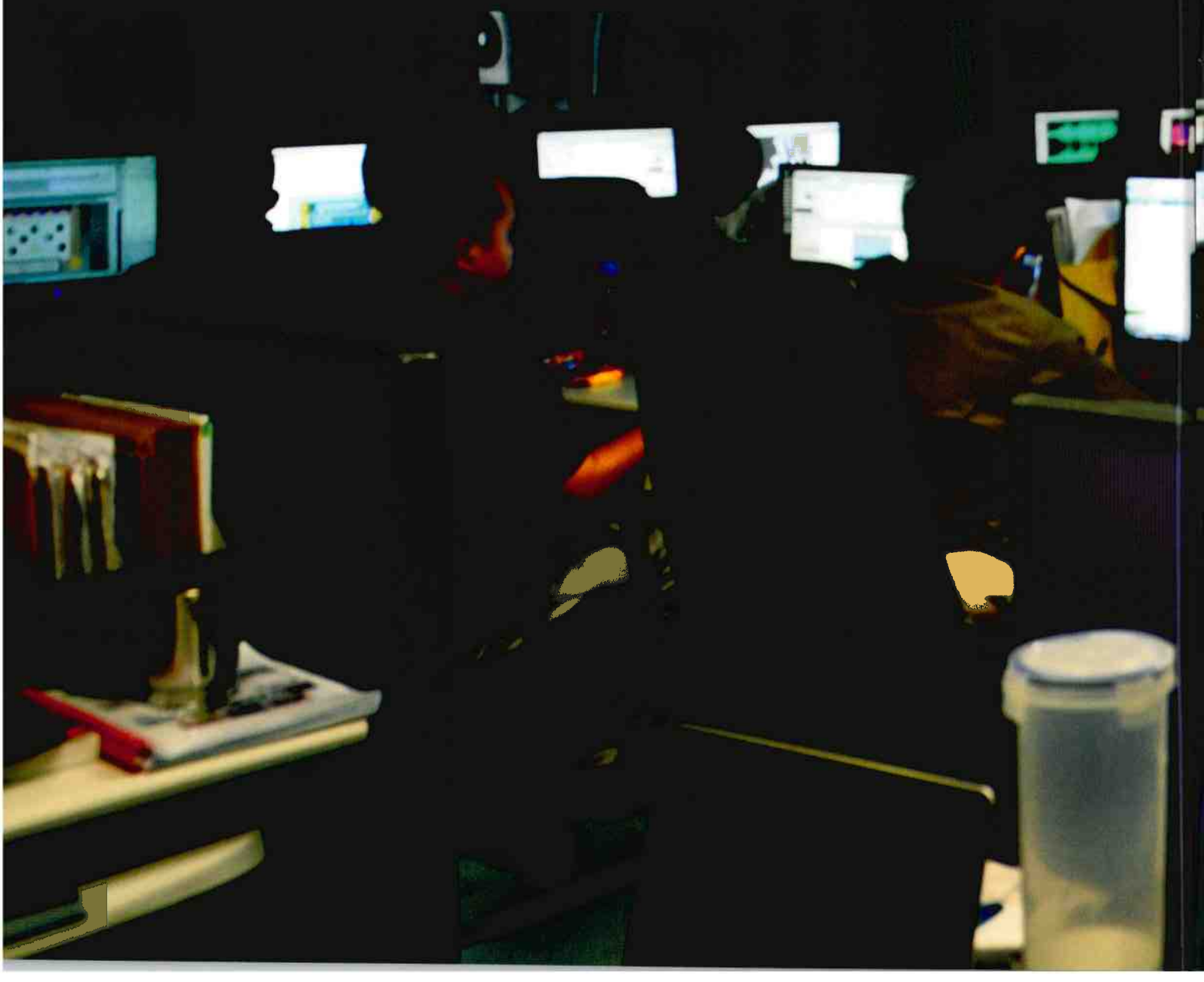
ASTI is one of the of three (3) agencies under DOST which was aimed at strengthening its human resources to respond and keep up with the rapidly changing and ever evolving technologies in the fields of information and communications and electronics. From a total of 49 authorized positions, and a corresponding Personal Services (PS) budget of Php10,801,902.44 at the start of ASTI's rationalization efforts in October 2005, the Institute now has a total of 67 authorized positions and a corresponding PS budget of Php16,229,370.04.

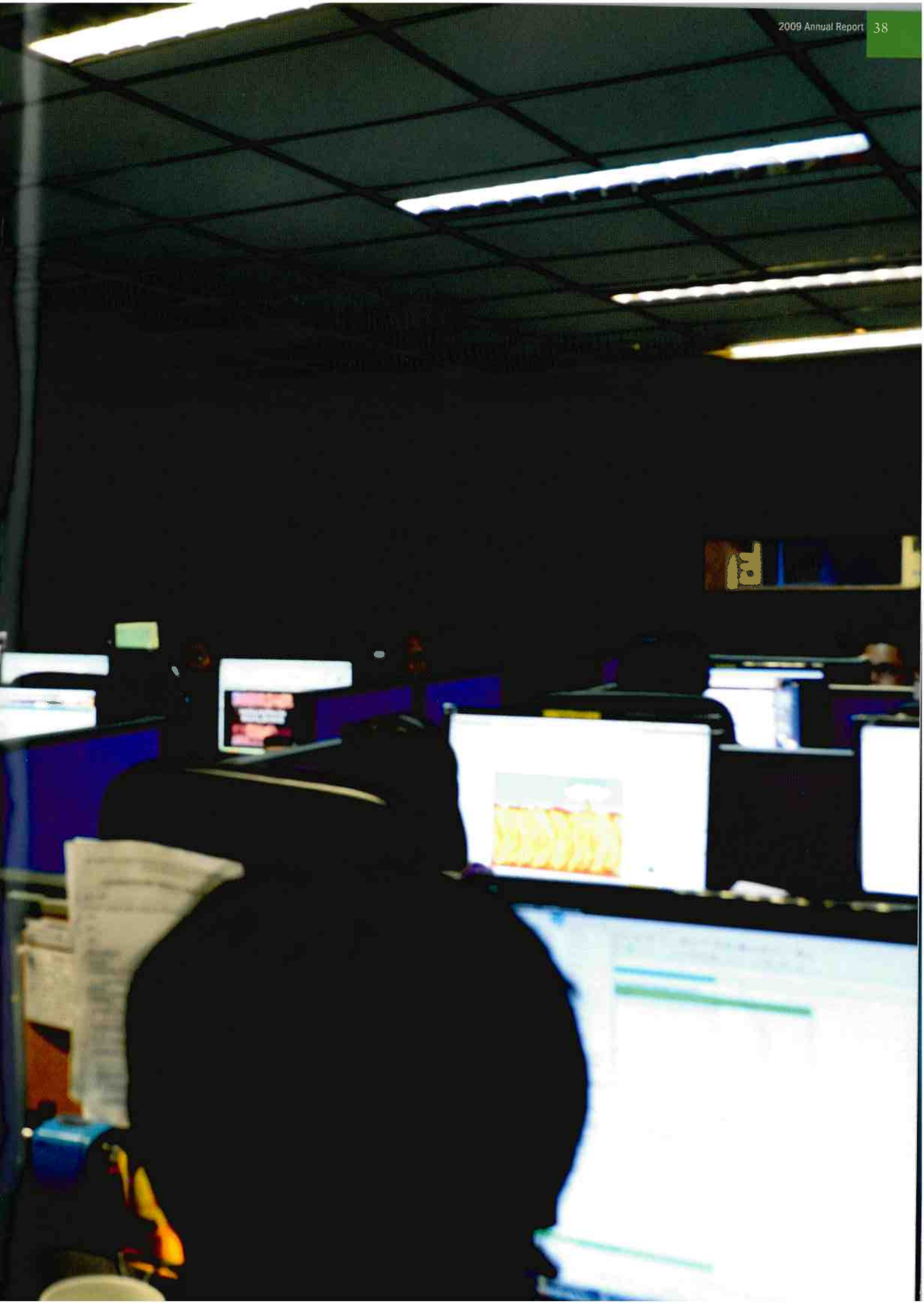
The increase in the number of positions is due to the creation of 19 positions distributed to the three (3) technical divisions of the Institute. Of these positions, 15 are already filled

Moreover, under the rationalized structure, ASTI no longer has a lump sum fund for contractual positions. ASTI09

Financial and Human Resources Management

ASTI's financial resources in 2009 (both local and international) have provided for the necessary operational and capital requirements of the agency enabling it to pursue its mandated activities of providing cutting-edge technology and high value services. Its manpower complement, on the other hand, was augmented in the same year making it possible for ASTI to undertake more R&D programs and projects thereby contributing to the improvement of the country's industry, governance and academe sectors.





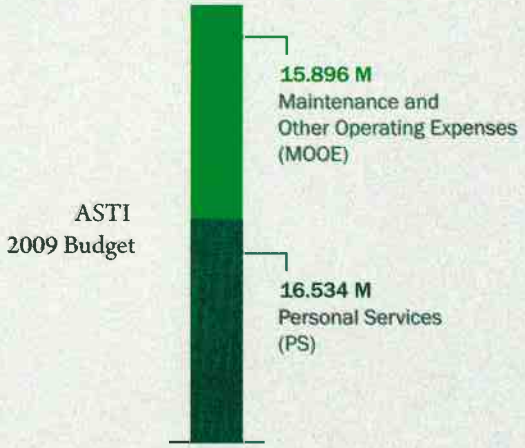
Financial Resource

External Resources Generated

In addition to the agency's yearly budget appropriation, ASTI was able to generate in 2009 a total amount of P24.4 million, bulk of which came from project fund releases, provision of PREGINET services, and technology transfer efforts. Of this amount, a sum of P9.5 million were released by various funding institutions for the Institute's on-going projects. An amount of P9.6 million were produced from PREGINET's webhosting, videoconferencing, videostreaming, and connectivity services. Conduct of various trainings in Open Source Applications, Office Productivity Tools, Networking, and Web Development generated P4.5 million while commercialization of ASTI products such as the GSM Data Terminal Kit, and Bayanihan Linux generated almost P0.7 million amount of sales.

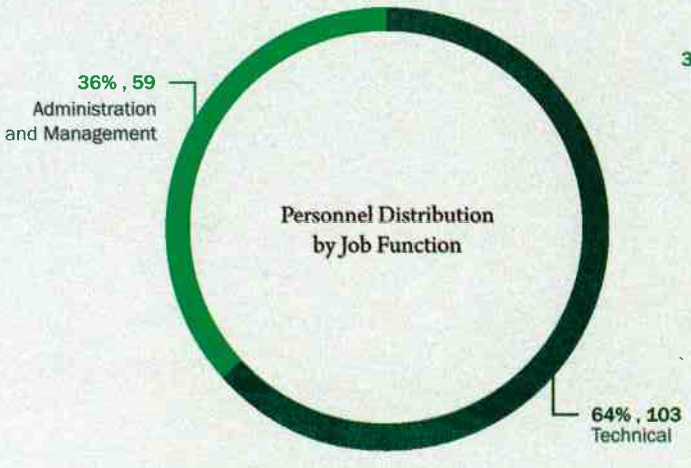
Budget Trends

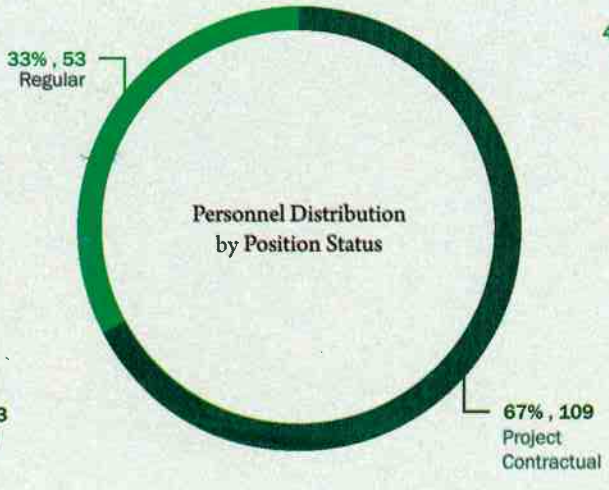
For the fiscal year 2009, ASTI was provided a total appropriation of PHP 32.430 Million. The agency's Personal Services (PS) budget was PHP 16.534 million, while the Maintenance and Other Operating Expenses (MOOE) budget was PHP 15.896 Million. No funds was appropriated for Capital Outlay.

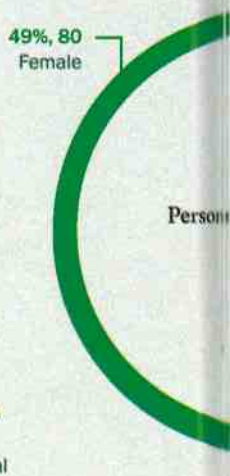


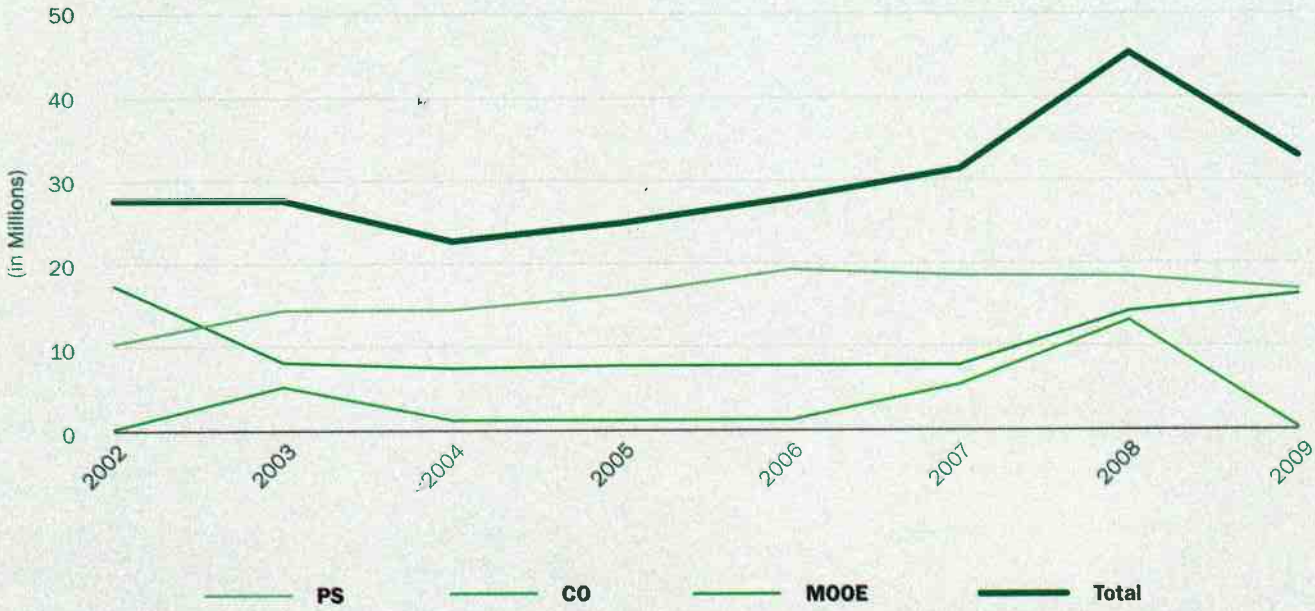
Human Resource

The accomplishments and contributions of ASTI in the fields of ICT and microelectronics were made possible by the hard work and dedication of its human resources which is composed of 52 regular personnel and 96 project staffs. It may be noted that with the approval of the Institute's Rationalization Plan, ASTI was strengthened in terms of additional positions for it to better respond and keep up with the rapidly









2002 - 2009 Budget Trend

changing and evolving technologies in information and communications, and electronics. As such, its staffing complement was increased from a total of 49 to 67 authorized positions.

The Institute gives importance to staff development through the various trainings and seminars that the employees participated in, as summarized in Table 6 (succeeding page). AST09

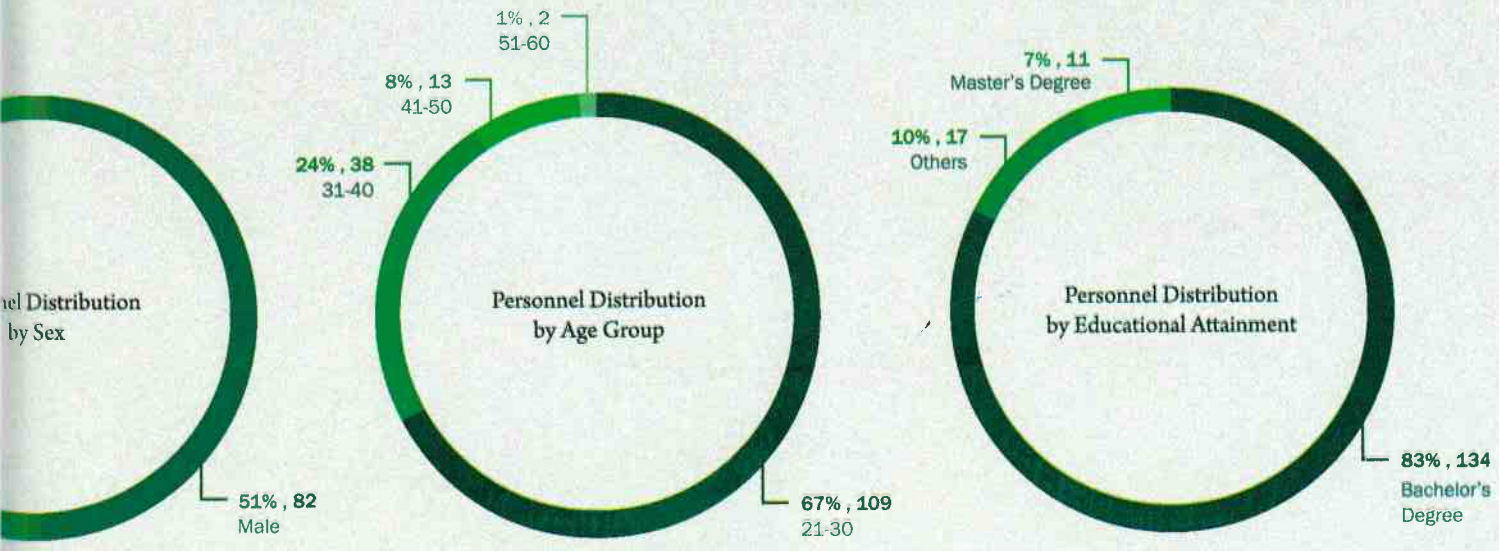


Table 6. Seminars, Workshops, and Training Programs Attended by the ASTI Personnel

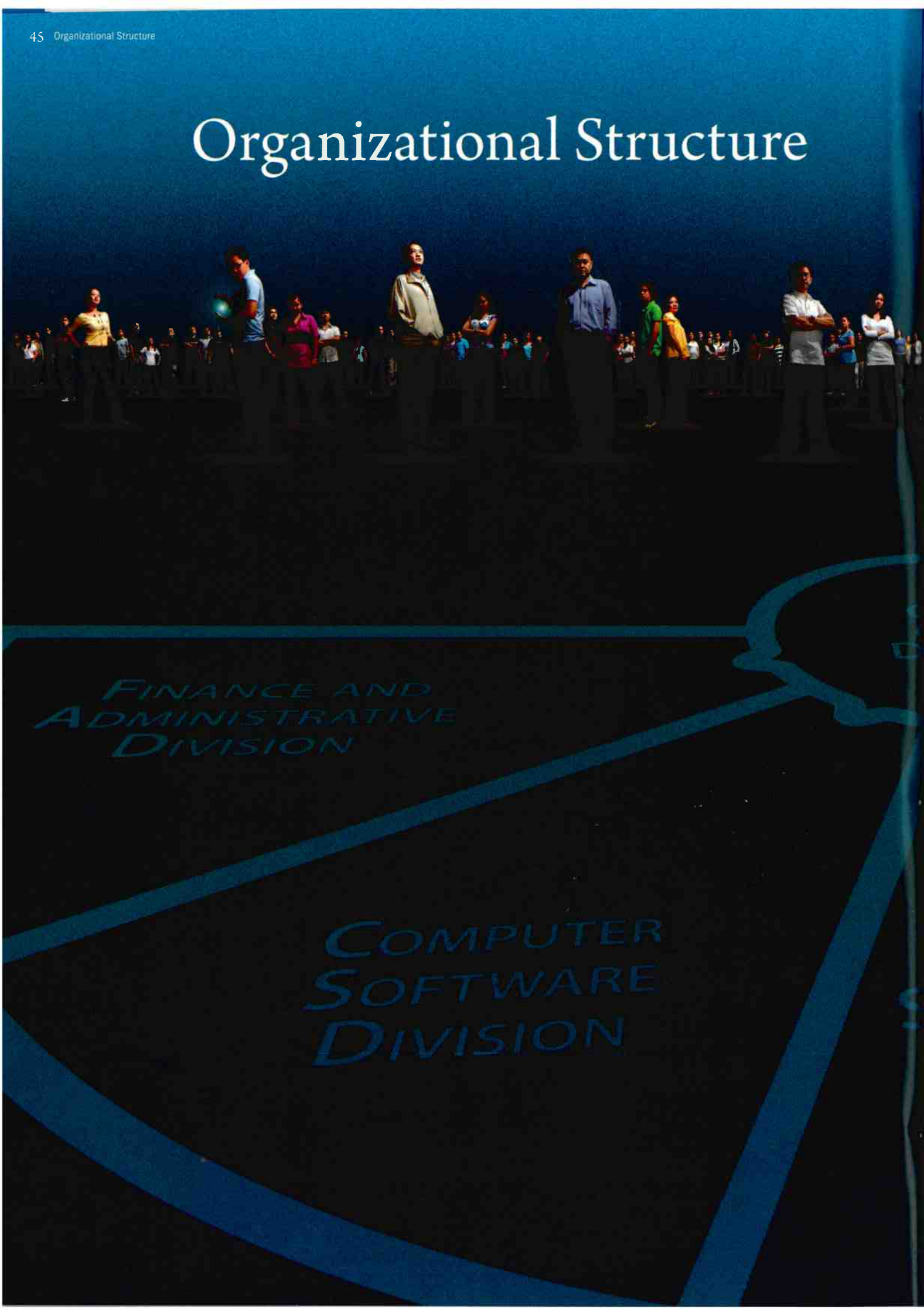
Title	Participants	Date	Venue
Seminar on ISO 9001:2008 Quality Management System Awareness	George A. Mesina Rusnell A. Espinoza Marianne Amparo P. Guzman	March 5, 2009	STII Mini- Theater DOST, Bicutan City
Interactive Training for Administrative And Finance Officers	Carmencita M. Echano Gay Concepcion S. Bugagao	March 24, 2009	GSIS Gymnasium GSIS, Roxas Boulevard, Pasay City
MySQL for Developers (Pilot Training)	Neil Xavier Elpa, George Mesina, Stephanie Azarias, Jeanette Badong, Lou Cendaña, Glenn Lopez, Mark Lester Terrado, Gerald Ancheta, Rose Ann Villones, Mariesonn Florendo, Russel Baisas, Urizza Marie Sarte, Emma Juco, Emily Pagador, Marilyn Rey, Peraliezl Dy Tioco, Hertz Ventura, Eman Aldea, Janice Carpo, Girlie Dimanarig, Bryan Pater	May 21-22, 2009	ASTI Computer Laboratory
Seminar-Workshop on "RA 9470 and Basic Records and Archives Management	Emma P. Juco	June 9-11, 2009	Tagaytay Country Hotel, Tagaytay city.
Training Program on Recruitment, Selection and Appointment	Atty. Carmencita M. Echano	July 17, 2009	UP NCPAG, Diliman, Quezon City
Effective Implementation of Document and Data Control	Emily Pagador Jose Eric S. Maglanque Jose Miguel D. Dela Rosa	July 14-16, 2009	The Metals Industry Research And Development Center Bicutan
Seminar/Dialogue implementation of COA Circular No: 2009-002, Reg: Reinstituting Selective Pre -audit on Government Transactions	Carmencita M. Echano Gay Concepcion S. Bugagao Antoniette C. Quintos Danilo R. Hapin	July 30, 2009	Professional Development Center, Commission on Audit, Commonwealth Avenue, Quezon City
Office and Communication Skills Enhancement for Secretaries	Aurora T. Leonido Pinky R. Manio	August 25, 2009	New EDSA Horizon Hotel, Mandaluyong City
Benefits and Compensation Administration	Carmencita M. Echano	August 14, 2009	National College of Public Administration and Governance, UP Diliman
Records and Information Management Training	Aurora T. Leonido Maricel Z. Castor Lina F Liboon	August 12-14, 2009	STII Mini-Theater, DOST, Bicutan City
Practical Software Testing Boot Camp	Jeffrey A. Aborot Joanna G. Syjuco	September 16-18, 2009	Software Quality Engineering & Testing Lab 17th Floor, 88 Corporate Center, 141 Sedeo St. Salcedo Village, Makati City
Presenting with Power	Ryne Amatorio, Jocel Atienza, Roxanne Aviñante, Stephanie Azarias, Russel Baisas, Janice Carpo, Lou-Ann Cendana, Girlie Dimanarig, Carmencita Echano, Greg Hermo, John Robert Mendoza, Mitz Ann Montañez, Marlene Morales, Ghea Oña, Arlene Punzalan, Aireen Relucio, Larayne Rubio, Shalee Villafuerte, Rose Ann Villones, Loraine Clarito, Marianne Amparo, Harris Osiana, Shanta Laura Velasquez	September 18, 2009	ASTI Training Room
Bayanihan 5 for Desktop Users (ISO Validation Training)	Cristine Balgua Emily Ann Cabuyoc Rachel Ann Cristino Joy Donor Carmencita Echano Aurora Leonido Ilyn Macinas Bernadette Ramones	October 22, 2009	ASTI Computer Laboratory

Title	Participants	Date	Venue
Benchmarking and Capability Assessment of IT Equipment (Pilot Training)	Roxanne Aviñante Mark Stephen Florencio Greg Hermo Mini May Markel John Michael Mercado Marlene Morales Arlene Punzalan Geraldine Oña Vanessa Osiana Farvey Gacias Shanta Laura Velasquez Shalee Villafuerte	November 20, 2009	ASTI Training Room
Training on Green Tech Boot Camp	Gerwin P. Guba	November 23-25, 2009	Conference room of UP-Ayala Land Techno Hub, Commonwealth Avenue, QC
Technical Training of CCS for TEC conducted by Smartmatic-TIM in partnership with COMELEC	Peter Antonio B. Banzon Hertz P. Ventura Reynaldo G. Callao Rearlizle S. Dy Tioco Janice C. Carpo Mae S. Bualat Jocel A. Atienza Jose Milo Gillesiana Jr. Stephen S. Florencio	November 16-17, 2009	14th Floor Times Plaza Building UN Avenue, corner Taft Ave Ermita Manila
Training Program of Financial Planning and Management	Marylou N. Rubillos Karen L. Felix Gay Concepcion S. Bugagao Carmencita M. Echano	November 19-20, 2009	STII Mini- Theater DOST, Bicutan City
Conduct and Provide Technical Assistance To the TACIS Regional Office Project Visit with the TACIS-TWG	Joanna G. Syjuco P Marco Z. Del Rosario Ana Marie Aquino Jed Barry Ebardaloza R-jay D. Tonio System Ana Liza Oleriana Marylou N. Rubillos Danilo R. Hapin Loraine D. Clarito	December 7-9, 2009	Mango Park Hotel , Cebu city.
Technical Training of EMS for TEC conducted by Smartmatic-TIM in Partnership with COMELEC	Peter Antonio B. Banzon Hertz P. Ventura Reynaldo Joseph A. Callao Pearliezl S. Dy Tioco Janice C. Carpo Jocel A. Atienza Stephen S. Florencio	December 7-10, 2009	Pearl Manila Hotel, General Luna Street, corner Taft & United Nations Avenue, Ermita, Manila
QMR Skills Development and ISO 9001:2008 Training	Ms. Amelia Hernandez Esteban	December 14-16, 2009	El Cielito Inn No. 804 Arnaiz Avenue , Makati City
DOST Website Technical Documentation Workshop For DOST Webmasters consortium members	Reila Anasol R. Irinco Jose Milo Gillesania Jr. Harris Rainier Osiana Aireen S. Relucio Mae S. Bualat	December 6-10, 2009	CSI Events centre, Maharlika Highway, Purok 2 Brgy. Sico, Lipa City, Batangas
The Enhancement Program For Property and Supply's Officers	Mr. Danilo R. Hapin	December 15-17, 2009	STII, Multi-Purpose Hall, DOST, Bicutan, Taguig City

2009 ASTI Officials

(From left to right) Alvin E. Retamar (Chief, Subdivision and Survey Engineering Division), Atty. Carmencita M. Echano (Chief, Finance and Administrative Division), Denis F. Villorente (Director), Jose Eric S. Maglanque (Chief, Knowledge Management Division), Peter Antonio B. Banzon (Chief, Research and Development Division), Joanna G. Syjuco (Chief, Cadastral Survey Division)

Organizational Structure



The approval of ASTI's Rationalization Plan that took effect on June 10, 2009, have resulted to a reorganization and adoption of a new organizational structure composed of the Office of the Director (OD), Finance and Administrative Division (FAD), and four (4) technical divisions namely: Research and Development Division (RDD), Solutions and Services Engineering Division (SSED), Computer Software Division (CSD), and Knowledge Management Division (KMD).

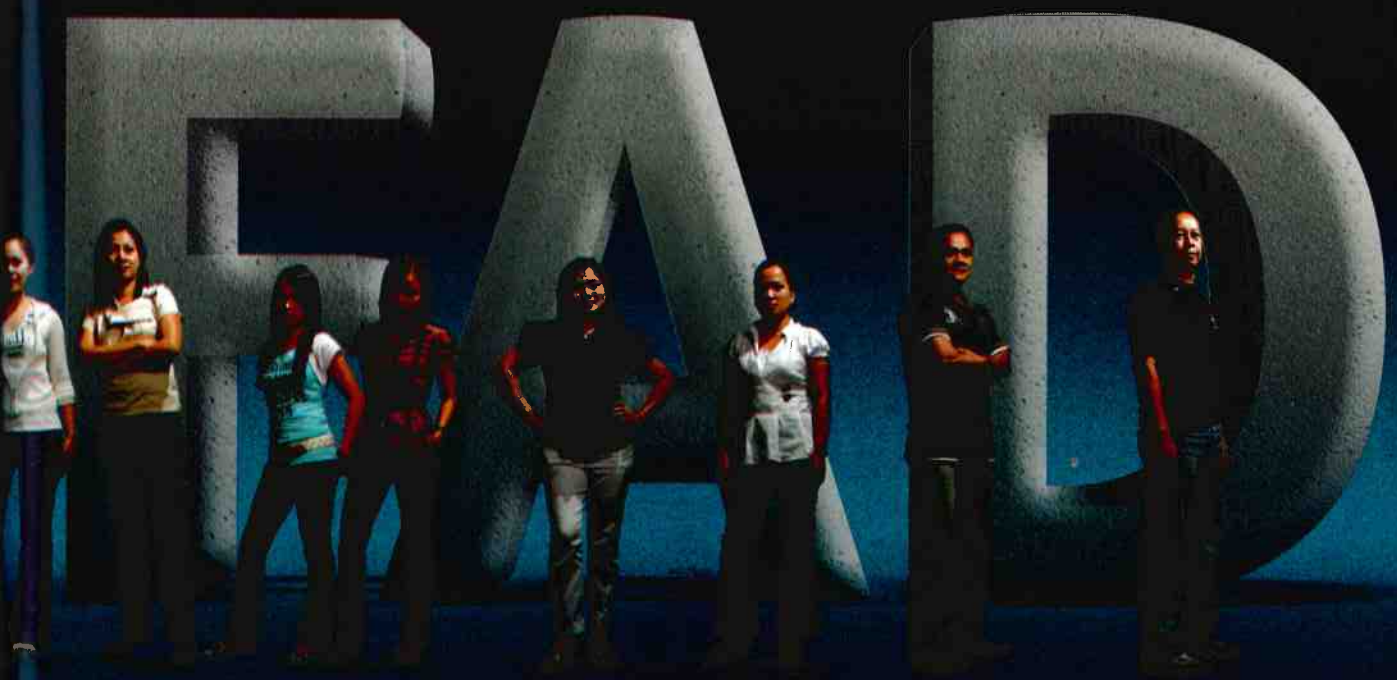
Finance and Administrative Division

The Finance and Administrative Division (FAD) provides support and the necessary services for the welfare of the agency and its staff. It advises and assists the Director on budgetary, financial and management matters. It also provides the Institute with economical, efficient and effective services relating to personnel, supplies, equipment, collections, disbursement, security and custodial work.

Office of the Director

The Office of the Director (OD) oversees the overall welfare of the agency as it sets the agency's strategic direction, formulates internal policies, and ensures implementation to attain goals and objectives. This group is also responsible for the planning and monitoring of research programs/projects and other activities of the agency, setting of performance indicators and evaluation of agency performance based on the formulated indicators. Since the human resource development is under OD, this division oversees the development of the competencies and expansion of the capabilities of the agency.

Other activities entrusted to the Office of the Director include establishment and sustaining partnerships and linkages with DOST and external organizations on R&D and technology transfer activities as well as scouting for possible funding sources for the agency's different programs.



Research and Development Division

The Research and Development Division (RDD) conducts strategic R&D in ICT and Electronics taking direction from the national S&T Plan as well as ICT and Electronics industry development roadmaps. The division is divided into three sections, namely: Network Research, Computing Research, and Microelectronics Research. The Network Research Section implements R&D projects in the fields of advanced networking and wireless technologies that are necessary for the design and implementation of innovative advanced networking products/services and wireless communications systems.

The Computing Research Section focuses on projects involving various computing technologies such as Open Source and Grid Computing which are significant in the development of software and firmware products.

The Microelectronics Research Section prioritizes research activities that will establish the design foundation and know-how vital for the country's entry into the local and global market for integrated circuits and embedded products and solutions.

Solutions and Services Engineering Division

The Solutions and Services Engineering Division (SSED) is the agency's center for contracted engineering and design work. It handles, supports, and markets various solutions and services. The division is composed of the Embedded Systems Group (ESG), the PREGINET, the K-Agrinet and the Business Development Unit (BDU).

The ESG is responsible for developing holistic embedded solutions for clients that incorporate microcontroller-based design, communication, graphical user interface, and applications.

The PREGINET operates and maintains the country's only nationwide research and education network and provides network services such as VoIP, IPv6, videoconferencing and other similar services.

The recently established BDU is envisioned to drive commercialization efforts through effective market research and communication. To complement these efforts and gain momentum to drive its activities, SSED actively seeks collaborations to effectively serve more clients from the academe, government, and industry.

Computer Software Division

The Computer Software Division (CSD) aims at becoming a premiere software development team providing innovative and quality software systems and applications. It will forge and strengthen partnerships with the academe, government, and industry by providing effective software solutions, software design and development consultancies, and contract researches.

Knowledge Management Division

The Knowledge Management Division (KMD) is created for the purpose of increasing and better leveraging ASTI's available intellectual capital and enable the Institute to continuously improve its performance through reuse of its intellectual capital.

The team is expected to carry out the following functions: a) Source, mine, synthesize, and package knowledge for internal and external use; b) Leverage knowledge to improve organizational performance of the agency; c) Proactively share knowledge for development impact; and d) Leverage KM as an integrating component for selected technology solutions.

MFO Data

Table 1a. Technology Transfer Beneficiaries (Commercialized)

BENEFICIARY		Technology/ies Transferred		Period of Engagement		Responsible Agency Staff
Name of Enterprise	Address	Title	Description	Start	End	Name
De La Salle	Lipa City, Batangas	GSM Data Terminal Kit	fabrication/ direct sale	Q1	Q1	Gerwin Guba
Information Technology Center for Agriculture & Fisheries (ITCAF) - Dept. of Agriculture		GSM Data Terminal Kit	fabrication/ direct sale	Q2	Q2	Gerwin Guba
Borland Devt. Corp.		Bayanihan Linux ver. 4 CD	direct sale/ copying services	Q1	Q1	Emman Balintec
Alfredo Hombrebueno (Personal)	STM Canlubang, Laguna	Bayanihan Linux ver. 4 CD	direct sale/ copying services	Q1	Q1	Emman Balintec
Paul Tolentino/Import Negros		Bayanihan Linux ver. 4 and ver. 5 CDs	direct sale/ copying services	Q2	Q2	Emman Balintec
Various individuals		Digital Multimeter	direct sale of DMM units by Alexan Commercial	Q1	Q4	Mr. Alex Sy
PCASTRD	DOST Compound, Bicutan, Taguig City	ASTI Information System (PMIS(employees and libraries), Procurement and Equipment Inventory (supplies inventory, PR generator, ITB generator, ABC generator, eqpt inventory), and Operations Mgt (announcements and events))	customization of ASTI Information System	Q2	Q2	Emily R. Pagador
Upscaled Food Inc.		GSM Data Terminal Kit	fabrication/ direct sale	Q3	Q3	Gerwin Guba
DENR-EMB		GSM Data Terminal Kit	fabrication/ direct sale	Q3	Q3	Gerwin Guba
TuloypNoy Organization	TuloypNoy Organization c/o Mr. Allan Capulong, Tel. no:(02)8295141, Email: caps11@yahoo.com	GSM Data Terminal Kit	fabrication/ direct sale	Q4	Q4	Gerwin Guba
CORE8 International Marketing	Unit 211 AIC Burgundy Empire Tower ADB Avenue, Ortigas Center, Pasig City, Tel. no: 571-6100 Fax No.: 571-6101 Email: support@core-8.com	GSM Data Terminal Kit	fabrication/ direct sale	Q4	Q4	Gerwin Guba
Mr. Frances Barbon-Computer Engineering Student	PUP, Anonas Street, Sta. Mesa, Manila	GSM Data Terminal Kit	fabrication/ direct sale	Q4	Q4	Gerwin Guba
DOST Quirino	Quirino Province	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q1	Q1	FPRDI/Alexan Commercial
Community Crafts Association of the Philippine	Quezon City, Metro Manila	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q1	Q1	FPRDI/Alexan Commercial
Jayce Phils. Corp.	36 Kalubkob, Silang, Cavite	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q1	Q1	FPRDI/Alexan Commercial
Mr. Nestor Gorgollo	Siay, Sibugay, Zamboanga	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q1	Q1	FPRDI/Alexan Commercial
JTC Pallets	8141 Dr. A.Santos Ave. San Dionisio, Sucat, Paranaque City Tel. no: 788-0034 to 37/829 0468	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
Rt Chemical	13 Joe Borris, Ilog Pasig, Manila	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
Filtra Inc. Philippine and Scandinavian Design	G/F Le Triomphe Bldg. 322 Sen. Gil Puyat Ave. 1227 Makati City	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
Consolidated Wood Products	D.A. Santos Ave., PRA Sucat Parañaque; Sector: Lumber Producer	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
IFON Trading	Biñan, Laguna, Tel. no: (049) 411-2436	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial

BENEFICIARY		Technology/ies Transferred		Period of Engagement		Responsible Agency Staff
Name of Enterprise	Address	Title	Description	Start	End	Name
TANN Philippines	Phil. Industrial Park, Brgy. Sta Anastacia, Sto. Tomas, Batangas	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
Denik Wood Enterprise	17 G Hermosa St. Pateros, Manila, Tel. no: 6434758	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q2	Q2	FPRDI/Alexan Commercial
DOST VI Provincial Science and Technology Center	Bacolod City, Negros Occidental	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q3	Q3	FPRDI/Alexan Commercial
ANP Showroom	Lourdes C Building 9th corner Lacson Streers, Bacolod City Negros Occidental 6100 Philippines Tel. no: 09175476279 Email: info@haciendacrafts.com	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q3	Q3	FPRDI/Alexan Commercial
PSTD Antique	Emilio B. Javier Sports Complex, Binirayan, San Jose, Antique Tel. no: 036 3201826	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q3	Q3	FPRDI/Alexan Commercial
Starwood Manufacturing Co. Inc.	30 P Deato Cor. Palo Alto Sts., Marulas, Valenzuela City, Philippines 1441, Manufacturer and exporter of Phil. Handicraft Tel. no: 292 2902, 291 6350/ 291 6345/291 6349 Fax: 292 2926	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q4	Q4	FPRDI/Alexan Commercial
Calfurn Mfg. Phil. Inc	Calfurn Mfg. Inc/Manga Rd. Pulungbulo A.C.	Digital Wood Moisture Meter	direct sale of DWMM units by FPRDI/Alexan Commercial	Q4	Q4	FPRDI/Alexan Commercial

Table 1b. Technology Transfer Beneficiaries (Diffusion)

BENEFICIARY		Technology/ies Diffused		Period of Engagement		Responsible Agency Staff
Name of Enterprise	Address	Title	Description	Start	End	Name
Various government , private, and academic institutions	Metro Manila	PREGINET	Product/Technology presentation	Q1	Q1	May Cayaban
Various government/private/ academe/research institutions	Sofitel Philippine Plaza, Roxas Blvd., Pasay City	TEIN3	Technology presentation	Q1	Q1	Bayani Benjamin Lara
PSHS Southern Mindanao Campus	Sto. Niño, Tugbok, Davao City	Science and Mathematics Courseware Website	Product launching/Technology presentation	Q2	Q2	Arlene Punzalan
Professionals/Students	SMX Convention Center, SM Mall of Asia, Pasay City	Courseware, Grid, & Field Monitoring technologies	Product/Technology talk and exhibit during the 4th Manila Trabaho sa Turismo Fair	Q2	Q2	Pedrito Mangahas
UP-Institute of Environmental Science and Meteorology (UP-IESM)	UP Diliman	High Performance Computing cluster	Product/Technology talk/ presentation during the meeting with the UP Institute of Environmental Science and Meteorology (UP-IESM) Deputy Director	Q2	Q2	Jeng Tetangco
UP-Marine Science Institute (UP-MSI)	UP Diliman	Grid HPC	Product/Technology discussion during the team's meeting with UP-Marine Science Institute (UP-MSI) for possible collaboration re: ASTI's Grid HPC and UP-MSI ocean currents modeling and simulation; processing and visualization of satellite images (SeaWiFS Data Analysis System (SeaDAS))	Q2	Q2	Jeng Tetangco

BENEFICIARY		Technology/ies Diffused		Period of Engagement		Responsible Agency Staff
Name of Enterprise	Address	Title	Description	Start	End	Name
AdMU and Univ. of Glasgow & GSI Darmstadt (organizers)		ASTI Grid	Participation to the 7th MODEL and PANDAGrid Workshop held May 4 – 6, 2009; venue: Tagbilaran City, Bohol; organized by AdMU and Univ. of Glasgow & GSI Darmstadt; c/o Grace DyJongco, et. al	Q2	Q2	Jeng Tetangco
Fullbrigwht College	Palawan	Bayanihan Linux, GSM, PicMe Microcontroller Kit, Wood Moisture Meter, EWST, PREDICT, FMON, FOSS	Product/Technology presentation during the educational trip of Fullbright College students	Q2	Q2	Pedrito Mangahas
PhilRice		Grid Infrastructure	Product/Technology presentation	Q2	Q2	Jeng Tetangco
Various government , private, and academic institutions	Metro Manila	BL 5, Courseware, KM, Training, eDOST, Embedded systems products (GSM, PicMe), PREGINET, ASTI Info sys	Product/Technology talk during the 2010 NSTW Exhibit at the PTTC, Roxas Blvd.	Q3	Q3	Pedrito Mangahas
Various government , private, and academic institutions	Peoples Center/DOST Region 8, Tacloban, Leyte; SM Bacolod/DOST Region 6, Negros Occidental; Dotties Hotel, Butuan City; SM Davao/ DOST Region 11, Davao City	BL 5, Courseware, KM, Training, eDOST, Embedded systems products (GSM, PicMe), PREGINET, ASTI Info sys	Product/Technology talk during the DOST Regional Cluster Exhibits at the following venues: Peoples Center/DOST Region 8, Tacloban, Leyte; SM Bacolod/DOST Region 6, Negros Occidental; Dotties Hotel, Butuan City; SM Davao/DOST Region 11, Davao City	Q3	Q3	Pedrito Mangahas
Various government , private, and academic institutions	Metro Manila	BL 5, GSM, PicMe, Training, Open TBI, PREGINET	Product and Technology talk during the "Software Freedom Day 2009" at the National Computer Center	Q3	Q3	Emman Balintec
Various government , private, and academic institutions	Vigan City, Ilocos Sur; New Washington, Aklan	eDOST-OS, Bayanihan for Gov, eDOST-Infra, PREGINET	Product/Technology presentation	Q3	Q4	Emman Balintec (eDOST-OS/ Bayanihan for Govt); May Cayaban (eDOST-Infra/PREGINET)
DOST Regional Director and PSTDs	Palo, Leyte	eDOST-OS, Bayanihan for Gov, eDOST-Infra, PREGINET	Product/Technology presentation	Q4	Q4	Emman Balintec (eDOST-OS/ Bayanihan for Govt); May Cayaban (eDOST-Infra/PREGINET)
Participation in the DOST Regional Cluster Exhibits; venue: SM Sta. Rosa, Laguna; duration: Nov 9-14, 2009; 618 visitors; venue: SM Naga, Camarines Sur; Duration: Nov 25-29, 2009; ; 544 visitors; venue: SM Rosales, Pangasinan; duration: Dec 3-6, 2009; 259 visitors	SM Sta. Rosa, Laguna; SM Naga, Camarines Sur; SM Rosales, Pangasinan	BL 5, Courseware, KM, Training, eDOST, Embedded systems products (GSM, PicMe), PREGINET, ASTI Info sys	Product/ Technology presentation during the DOST Regional Cluster Exhibits at the following venue: SM Sta. Rosa, Laguna; SM Naga, Camarines Sur; SM Rosales, Pangasinan	Q4	Q4	Pedrito Mangahas
PHIVOLCS	C.P. Garcia Ave., Diliman, Q.C.	Early Warning System for Tsunami	Product/Technology demonstration	Q1	Q1	Gerwin Guba
PSHS	Q.C.	Science and Math Courseware Website (navigation and exploration of the content of the website)	Product/Technology demonstration	Q2	Q2	Emily Pagador
PCASTRD	DOST, Bicutan, Taguig City	ASTI Infosys	Product/Technology presentation	Q2	Q2	Emily Pagador
PAGASA	Q.C.	ASTI Infosys	Product/Technology presentation	Q3	Q3	Emily Pagador
DOST Regional Director	PSTD, Davao City	eDOST-Infra	Consultative meeting	Q4	Q4	May Cayaban
Professionals/Students		BL 4, BL 4 Beta 2, BL 4 Beta 1, BL 3.1, BL Server 2005, BL Server 2006, BL 5, BL 5: Live, BL 5: 64 bit, BL 5 for Government, BL 5 for Government: Live	Downloading of versions of Bayanihan Linux Desktop application	Q1	Q4	Emman Balintec
Professionals/Students		Elementary Science and Mathematics Courseware	Downloading of Courseware modules	Q4	Q4	Arlene Ponzalan

Table 2. **Consultancy Beneficiaries**

BENEFICIARY		Title of Consultancy Services rendered	Period of Engagement		Field Staff
Name of Enterprise/ Organization	Address		Start	End	Name
Various Government Institutions	-	Inquiries re: DNS (i.e. Domain name application, transfer, setup, login information, servers, online domain, account information	Q1	Q4	Emily R. Pagador
Various Individuals/ professionals	-	Bayanihan Linux inquiries thru e-mails, phone calls, walk-ins	Q1	Q4	Emman Balintec
UP Los Baños	Los Baños, Laguna	Inquiries re: PREGINET link (by UP Los Baños and UP Manila)	Q1	Q1	May Cayaban
UP Manila	Manila	Inquiries re: PREGINET link (by UP Los Baños and UP Manila)	Q1	Q1	May Cayaban
Office of the Solicitor General	Makati City, Metro Manila	Consultative meeting re: eDOST-Open Standards	Q2	Q2	Emman Balintec
Local and International participants during the 4th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management 2009	-	Resource speaker for the paper entitled "FPGA Based Agrep for DNA Microarray Sequence Searching" during the "4th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management 2009" at the Century Park Hotel, Manila; Organized by HNICEM headed by Dr. Alvin Culaba of La Salle Univ.	Q1	Q1	Emilyn Escabarte, Mark Oliver Ouano, Gabriel Villorent
Individuals/professionals	Canada, Laguna, Davao City	Inquiries re: Bayanihan Linux thru emails, phone calls, walk-ins	Q1	Q1	
De La Salle	Lipa City, Batangas	Inquiries re: GSM Data Terminal	Q1	Q1	Gerwin Guba
Online Thinkers Technology		Inquiries re: GSM Data Terminal	Q1	Q1	Gerwin Guba
Woodfields Consultants, Inc.		Inquiries re: GSM Data Terminal	Q1	Q1	Gerwin Guba
Bases Conversion Devt. Authority-BCDA		Product/technology talk re: PREGINET services such as Interconnectivity, Web Hosting, and Server Co-location	Q1	Q1	May Cayaban
Metro Manila Devt. Authority-MMDA	Quezon City, Metro Manila	Product/technology talk re: PREGINET services such as Interconnectivity, Web Hosting, and Server Co-location	Q1	Q1	May Cayaban
Participants on the 2009 International Conference on Computer Engineering and Applications (ICCEA 2009		Resource speaker for the paper: "FPGA Based Agrep for DNA Microarray Sequence Searching" during the 2009 International Conference on Computer Engineering and Applications (ICCEA 2009); organized by IACSIT (Intl. Asso. of Computer Science & Info. Technology) at the Manila Grand Opera Hotel, Manila	Q2	Q2	Jeng Tetangco
Information Technology Center for Agriculture & Fisheries (ITCAF)- Dept. of Agriculture	Quezon City, Metro Manila	Inquiries re: GSM Data Terminal	Q2	Q2	Gerwin Guba
DLSU	Taft, Manila	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
Islandshot.com Inc.	-	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
DLSU	Osamiz City	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
Upscaled Food Inc.	17 Maningning St. Sikatuna Village Quezon City	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
DENR-EMB(Environmental Management Bureau)	Agham Road, Q.C.	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
Nextgen Solutions	11th General San Diego Street SSS Village, Marikina City	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
Tuloy Pnoy Organization	-	Inquiries re: GSM Data Terminal	Q3	Q3	Gerwin Guba
Participants during the "Earth Sciences International Conference (SIC 2009)	-	Resource Speaker for the Paper Abstract entitled "Harnessing ICT and High Performance Computing for Environmental Monitoring and Hazard Mitigation" during the "Earth Sciences International Conference (SIC 2009) at the Heritage Hotel	Q3	Q3	Jeng Tetangco
Mr. Eric Agustin	UP Diliman, Q.C.	Inquiries re: Bayanihan Linux	Q4	Q4	Emman Balintec
UP student	UP Diliman, Q.C.	Inquiries about ASTI Programs and Projects	Q4	Q4	Emma Juco
DLSU	Taft, Manila	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
Univ. of Southern Mindanao (Coll. Of Eng'g and Computing)	Kabacan, Cotabato	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
Alpha Beta Form Corp (IT Dept)	Block 22 Lot 1 Dasmarinas Village, Dasmarinas Cavite	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba

BENEFICIARY		Title of Consultancy Services rendered	Period of Engagement		Field Staff
Name of Enterprise/ Organization	Address		Start	End	Name
CM Software Technology	Emerald Condo, 54 Road 3 corner Road 8, Project 6, Q.C	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
Asean Foundation	-	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
Solid Broadband Corp.	2285 Pasong Tamo Extension Makati City	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
Mr. Neil Paz (IT Consultant)	-	Inquiries re: GSM Data Terminal	Q4	Q4	Gerwin Guba
COMELEC Technical Evaluation Committee for 2010 Automated Election	Q.C., Metro Manila	Consultancy	Q4	Q4	Denis F. Villorente

Table 3. S&T Service Beneficiaries

Beneficiary		Technical Services rendered	Period of Engagement		Field Staff
Name of Enterprise/ Organization	Address		Start	End	
PREGINET partner-institutions (K-AGRINET connections included)	-	Continuous maintenance of PREGINET network infrastructures	Q1	Q4	May Cayaban
PNRI	Q.C.	videoconferencing of PNRI with the International Atomic Energy Agency in Vienna, Austria (PAID)	Q1	Q1	May Cayaban
FPRDI	Los Baños, Laguna	configuration of FPRDI's network monitoring server	Q1	Q1	May Cayaban
UP Los Baños	Los Baños, Laguna	fixing of routing problem to APAN	Q1	Q1	May Cayaban
UP Manila National Telehealth Center; TRC; Biosafety Clearing House	Padre Faura, Manila	server co-location for UP Manila National Telehealth Center; TRC; Biosafety Clearing House	Q1	Q1	May Cayaban
UP-PGH Dept. of Surgery	Padre Faura, Manila	videoconferencing of UP-PGH Dept. of Surgery for the "Medical Working Group CanalAvist Session"	Q1	Q1	May Cayaban
APNIC	Level 1, 33 Park Road Milton, Brisbane QLD 4064 Australia	videoconferencing/videostreaming for APRICOT 2009 (requested by APNIC)	Q1	Q1	Ma. Irene Amatorio
DOH	Manila	Upgrading of DOH bandwidth to six (6) mbps	Q1	Q1	Emily R. Pagador
UP PGH	Padre Faura, Manila	TAGE (Thai Association for Gastrointestinal Endoscopy) Teleconferencing (via DVTS) of UP-PGH with Chulalongkorn Univ. Faculty of Medicine in Thailand, Kyushu Hospital in Japan (thru APAN), medical doctors in Malaysia (thru MYREN), and medical doctors in Vietnam (thru VINAREN)	Q1	Q1	Emily R. Pagador
CanalAVIST (Canal ASEAN Virtual Institute of Science and Technology) organization	-	videoconferencing testing as per request of the CanalAVIST (Canal ASEAN Virtual Institute of Science and Technology) organization	Q1	Q1	May Cayaban
DOST-RO VI	DOST Compound, Bicutan, Taguig City	Network configuration and interconnectivity for DOST-RO VI	Q2	Q2	Benjamin Lara
DOST-ITD	DOST Compound, Bicutan, Taguig City	Technical assistance in resolving slow interconnectivity	Q2	Q2	May Cayaban
DOST	DOST Compound, Bicutan, Taguig City	videostreaming/videoconferencing during NSTW 2009 Press Conference, Opening Ceremony, & QCSC Exhibit	Q2	Q2	May Cayaban
NAST	DOST Compound, Bicutan, Taguig City	videostreaming of the Annual Scientific Meeting at the Manila Hotel	Q3	Q3	May Cayaban
Dr. Edison Cruz	UP Technology Management Center, UP Diliman, Q.C.	Videoconferencing (via Polycom) with UNESCO e-Learning Course	Q3	Q3	May Cayaban
COMELEC	Q.C.	videoconferencing via Polycom at ASTI	Q3	Q3	May Cayaban
SEI	DOST Compound, Bicutan, Taguig City	videoconferencing at ASTI	Q3	Q3	May Cayaban
PSHS	Agham Road, Q.C.	videostreaming	Q3	Q3	May Cayaban
DILC	-	DVTS (Digital Video Transport System) Testing with DILC; Sept 16, 2009	Q3	Q3	Benjamin Lara
UP PGH	Padre Faura, Manila	videoconferencing with PGH, MMC, SJDH during the 28th APAN Meeting at Malaysia via DVTS	Q3	Q3	May Cayaban
DOST RO XII	-	videostreaming of the "2nd Philippine National Halal Forum	Q4	Q4	May Cayaban

Beneficiary		Technical Services rendered	Period of Engagement		Field Staff
Name of Enterprise/ Organization	Address		Start	End	
PCASTRD	DOST Compound, Bicutan, Taguig City	videoconferencing for "PCASTRD 2009 Search for Outstanding Thesis and Dissertation in the Advanced S&T fields	Q4	Q4	May Cayaban
COMELEC	Q.C.	Audio conferencing	Q4	Q4	May Cayaban
Government Institutions	-	DNS (Domain Name System) Service - registration, approval, modification, deletion, etc.	Q1	Q4	Emily R. Pagador
DNS-Registered government institutions	-	Maintenance of the database of DNS-registered government institutions	Q1	Q4	Emily R. Pagador
City of Sta. Rosa	Laguna	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
Municipality of Ilagan	Isabela	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
City of CDO	Cagayan de Oro	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
Municipality of Sta. Maria	-	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
Municipality of General Nakar	-	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
Province of Leyte	-	Technical support for domain transfer	Q1	Q1	Emily R. Pagador
DOTC-TELOF	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Prov. of Ilocos Norte - City of Laoag	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Province of Cotabato	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
North Luzon Growth Quadrangle Area	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Province of Cebu-Municipality of Aloguinsan;	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Office for Transportation Security	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Mindanao Economic Development Council;	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Punonghimpilan Tanod Baybayin ng Pilipinas;	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Information Technology Mgt. Service	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador
Lungsod ng Pasay, Kalahang Maynila; Tanggapan ng Alkalde)	-	Technical assistance in logging-in (ID and Password)	Q2	Q2	Emily R. Pagador

Table 4. R&D Projects Implemented

Title of R&D Project	Socio-Economic Objective	Project Duration		Project Leader		2009 Expenditure	Funding Source	Status
		Start	End	Name	Email		Name of Funding Institution	
Boosting Grid Computing Using Reconfigurable Hardware Technology	Access to information	Jan 2008	Dec 2010	May Grace C. Dy Jongco	gracedj@asti.dost.gov.ph	12,334,917	DOST-GIA	On-going
Boosting Social and Technological Capabilities for Bioinformatics Research	Access to information	Jan 2008	Dec 2010	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	3,600,430	DOST-GIA	On-going
Embedded Systems and Programmable Logic Systems Development	Access to information	Jun 2001	Continuing (devt and enhancement)	Alvin E. Retamar	ning@asti.dost.gov.ph	-	ASTI	On-going
Knowledge Networking Towards Enterprising Agricultural Communities (K-AGRINET): e-Farm & e-Consortia	Access to information		Dec 2010	Denis F. Villorente	denis@asti.dost.gov.ph	5,706,333	CICT (thru Development Academy of the Philippines)	On-going
EUAsia Grid - Towards a Common e-Science Infrastructure for the European andAsian Grids	Access to information	April 2008	Jun 2010	Project Coordinator: Peter Antonio B. Banzon	peter@asti.dost.gov.ph	495,773	European Commission (EU)	On-going
Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy (PREDICT) Prevention and Mitigation	Access to information	Jan 2008	Jun 2010	Alvin Retamar	ning@asti.dost.gov.ph	2,571,414	DOST-GIA	On-going
Early Warning System for Tsunami (EWST)	Access to information	Jan 2008	June2009	Denis F. Villorente	denis@asti.dost.gov.ph	665,807	DOST-GIA	Completed

Title of R&D Project	Socio-Economic Objective	Project Duration		Project Leader		2009 Expenditure	Funding Source	Status
		Start	End	Name	Email		Name of Funding Institution	
Infrastructure and Connectivity Component - eDOST-INFRA: Upgrading of DOST ICT Infrastructure and Interconnectivity Network	Access to information	Jan 2008	Dec 2010	Bayani Benjamin R. Lara	bani@asti.dost.gov.ph	17,564,684	DOST-GIA	On-going
Tests, Analyses, and Calibration Information Systems	Access to information	Jan 2005	Dec 2010	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	963,058	DOST-CICT (e-gov fund)	On-going
Upgrading of Facilities fo the DOST RDIs in Support of R&D and S&T Services	Access to information	Aug 2007	Aug 2010	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	12,282,377	DOST-GIA	On-going
Information Systems Component -eDOST-INFOSYS: Upgrading and Development of DOST Information Systems	Access to information	Jan 2008	Dec 2010	Joanna Syjuco	joan@asti.dost.gov.ph	7,663,902	DOST-GIA	On-going
"e-DOST- Open Standards: Program and Change Management and Implementation of Open Standards to DOST"	Access to information	Jan 2008	Dec 2010	Emman P. Balintec	emman@asti.dost.gov.ph	2,598,406	DOST-GIA	On-going
Further Developing Strategic R&D Cooperation with South-East Asia on ICT (SEACOOP)	Access to information	Jan 2008	Mar 2009	Denis F. Villorente	denis@asti.dost.gov.ph	448,508	European Commission	Completed
Establishment of DOST-PEZA Open Technology Business Incubator	Access to information	Jan 2008	Dec 2011	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	3,651,933	DOST-GIA	On-going
Development of interactive Science and Mathematics Courseware for Secondary Level Schools	Access to information	Oct 2008	Dec 2012	Joanna Syjuco	joan@asti.dostgov.ph	7,208,516	DOST-SEI	On-going
Development and Commercialization of Locally Designed Digital Moisture Meter for Bamboo and Other Non-Timer Products	Industrial production and technology	Dec 2008	Dec 2010	Project Leader from FPRDI; ASTI Lead Staff: Alvin E. Retamar	ning@asti.dost.gov.ph	254,388	DOST-FPRDI	On-going
Development and Evaluation of Technical Specifications for the Wireless Internet Learning Laboratory (WILL) of iSchools Project	Access to information	Nov 2008	Nov 2009	Peter Antonio B. Banzon	peter@asti.dost.gov.ph	-	CICT	Completed
VLSI Testing Seminar Project	Others (Micro-electronics)	May 2008	Apr 2009	Denis F. Villorente	denis@asti.dost.gov.ph	351,635	JAGEF (Japan-ASEAN General Exchange Fund)	Completed
Multicast Experiment Using the WINDS Satellite	Access to information	Dec 2007	Nov 2009	Denis F. Villorente	denis@asti.dost.gov.ph	-	JAXA (Japan Aerospace Exploration Agency)	On-going/ Infra is operational
Development of a Field Monitoring (FMON) System	Access to information	Jan 2009	Dec 2010	Denis F. Villorente	denis@asti.dost.gov.ph	2,412,279	DOST-GIA	New

Table 5. Personnel Profile

Category	Number	% Distribution
Total Number of Personnel	162	
By Job Function		
Administration and Management	59	36%
Technical	103	64%
By Position Status		

Category	Number	% Distribution
Regular	53	33%
Project contractual	109	67%
By Sex		
Male	82	51%
Female	80	49%
By Age Group		
20 years old and below	-	-
21-30	109	67%
31-40	38	23%
41-50	13	8%
51-60	2	1%
60 years old and over	-	-
By Educational Attainment		
With PhD	-	-
Master's Degree	11	7%
Bachelor's Degree	134	83%
Others	17	10%

Table 6. Intellectual Properties Filed/Granted

Title/Description of Intellectual Property	Application/ Registry No.	Type of IP	Name of Researcher/Inventor	Status	Date Filed/ Granted
Handbook of Practical Tips in FPGA-Based Design Using VHDL	A 2005-2507	Copyright	Jose Redentor A. Glifonea, Carmelo D. Cayaban, Rowena D. Saldaña	Granted	Dec 8, 2005
"Self-Paced Learning Modules for Digital and Analog Integrated Circuit Design Courses (Unit 1-4, and Laboratory Manual)"/A 2006-3242	A 2006-3242	Copyright	Mary Grace C. Dy Jongco, Jeffreyk S. Mendiola, Aaron S. Cabuling, Benson T. Siongco	Granted	Nov 15, 2006
Bayanihan Linux Thin Client Manager Software	N 2005-185	Copyright	Peter Antonio B. Banzon, Joanna S. Gonzales, Joseph F. Syjuco, Geraldine I. Lugod, Arjyl V. Betan, Ryan Joshua B. Asuncion, Rusnell A. Espinoza	Granted	Dec 8, 2005
User Manual: Bayanihan Linux Thin Client Manager, Your Total Linux Thin Client Solution	A 2005-2508	Copyright	Peter Antonio B. Banzon, Joanna S. Gonzales, Joseph F. Syjuco, Geraldine I. Lugod, Arjyl V. Betan, Ryan Joshua B. Asuncion, Rusnell A. Espinoza	Granted	Dec 8, 2005
"Bayanihan Linux 4 Manual"	A 2007-875	Copyright	Jaime Sebastian G. Sicam, Janice M. Ballesteros, Emmanuel P. Balintec, Katrina T. Murga, & Janice C. Carpo	Granted	Apr 25, 2007
"User Guide Digital Wood Moisture Meter: FA507"	0 2008-31	Copyright	Marina A. Alipon, Gil B. Dolotina, Gerwin P. Guba, Grecelda A. Eusebio, & Alvin E. Retamar	Granted (ASTI/FPRDI)	Oct 9, 2008
Digital Wood Moisture Meter	2-2009-000048	Utility Model	Marina A. Alipon, Gil B. Dolotina, Gerwin P. Guba, Grecelda A. Eusebio, Alvin E. Retamar, Alexander E. Sy	Granted (ASTI/FPRDI)	Aug 17, 2009
FPRDI FA507 Wood Moisture Meter	4-2009-001908	Trademark	Marina A. Alipon, Gil B. Dolotina, Gerwin P. Guba, Grecelda A. Eusebio, & Alvin E. Retamar	Granted (ASTI/FPRDI)	Jul 9, 2009

Table 7. Scientific Papers Published/Presented

Title of Scientific Paper	Author/s		Date Published/ Presented
	Name	E-Mail	
"FPGA Based Agrep for DNA Microarray Sequence Searching"	Mark Oliver L. Arano, Gabriel F. Villorente, Mary Grace C. Dy Jongco, Emilyn B. Escabarte	graced@asti.dost.gov.ph	Presented during the "2009 International Conference on Computer Engineering and Applications (ICCEA 2009)"
Grid Computing for Bioinformatics: An Implementation of a User-friendly Web Portal for ASTI's In Silico Laboratory	Rey Vincent P. Babilonia; Marilyn V. Rey; Emmanuel D. Aldea; Urizza Marie L. Sarte	eman@asti.dost.gov.ph; marilyn@asti.dost.gov.ph; yuri@asti.dost.gov.ph	Presented during the "Third Network for Integrative and Multidisciplinary Bioinformatics Utilization Strategies (NIMBUS) Conference"

Table 8. Technical Training Courses Conducted

Title of Training	Training Location			No. of Participants	Inclusive Dates Conducted	
	Venue	Municipality/ City	Province		Start	End
"APRICOT 2009 Manila" or "2009 Asia Pacific Regional Internet Conference on Operational Technologies"	Sofitel Philippine Plaza Manila	Manila	Metro Manila	644 international and local participants from academic institutions, country code Top-Level Domain organizations, government, ISPs, IX, National Internet Registries, Regional Internet Registries	Feb 18, 2009	Feb 27, 2009
DOST Webmasters consortium's training on Website Migration to Joomla 1.5 last June 22-26, 2009 for the DOST Central Offices	ASTI	Q.C.	Metro Manila	28	Jun 22, 2009	Jun 26, 2009
Principles on Web Development/ W3C Standards/Accessibility/Basic Database Management/ Web Security	ASTI	Q.C.	Metro Manila	40	Apr 20, 2009	Apr 24, 2009
Principles on Web Development/ W3C Standards/Accessibility/Basic Database Management/ Web Security	Tagbilaran City		Bohol	29	May 4, 2009	May 8, 2009
Conversion of Templates to JOOMLA 1.5 and Photoshop on May 20-22, 2009	Tagbilaran City		Bohol	35	May 20, 2009	May 22, 2009
Conversion of Templates to JOOMLA 1.5 and Photoshop	ASTI	Q.C.	Metro Manila	26	May 27, 2009	May 29, 2009
MySQL for Beginners Pilot Training	ASTI	Q.C.	Metro Manila	26	May 21, 2009	May 22, 2009
Bayanihan for Desktop Users (Pilot)	ASTI	Q.C.	Metro Manila	12	May 28, 2009	May 29, 2009
Multimedia Network Training (Batch 1)	ASTI	Q.C.	Metro Manila	19	May 25, 2009	May 26, 2009
Multimedia Network Training	ASTI	Q.C.	Metro Manila	26	Jun 1, 2009	Jun 2, 2009
DOST Webmasters Consortium training on Website Migration to Joomla 1.5 (Batch 2)	FPRDI	Los Baños	Laguna	24	Jul 6, 2009	Jul 9, 2009
DOST Webmasters Consortium training (Batch 3)	FNRI	Bicutan, Taguig	Metro Manila	15	Jul 13, 2009	Jul 16, 2009
DOST Webmasters Consortium training on Website Migration to Joomla 1.5 (Batch 4)	FPRDI	Los Baños	Laguna	20	Aug 11, 209	Aug 14, 2009
MySQL for Beginners	ASTI	Q.C.	Metro Manila	14	Sept 23, 2009	Sept 24, 2009
Bayanihan 5 for Desktop Users	ASTI	Q.C.	Metro Manila	10	Oct 22, 2009	Oct 22, 2009
Open Office Training & Open Source Migration	ASTI	Q.C.	Metro Manila	15	Nov 17, 2009	Nov 19, 2009
Benchmarking and Capability Assessment of IT Equipment	ASTI	Q.C.	Metro Manila	12	Nov 20, 2009	Nov 20, 2009
Benchmarking and Capability Assessment of IT Equipment	ASTI	Q.C.	Metro Manila	20	Nov 27, 2009	Nov 27, 2009
User training on the "EWST Alarm System Operations Maintenance"	PHIVOLCS	Q.C.	Metro Manila	5	Nov 2009	Nov 2009
Website Migration Bootcamp	ASTI	Q.C.	Metro Manila	21	Nov 4, 2009	Nov 5, 2009
Technical Documentation (Batch 1)			Batangas	21	Dec 7, 2009	Dec 8, 2009
Evaluation and Planning Workshop	ASTI	Q.C.	Metro Manila	23	Dec 15, 2009	Dec 16, 2009
DOST Performers Training			Aklan	39	Oct 20, 2009	Oct 22, 2009
DOST Performers Training			Cebu	39	Dec 8, 2009	Dec 9, 2009
DOST Performers Training			Batangas	19	Dec 9, 2009	Dec 10, 2009

Table 9. International Scientific Linkages and Networks

Name of Institution	Location/ Country	Nature /Description of Scientific Linkages
Ministry of Agriculture, Fisheries and Forestry Information Network (MAFFIN)	Japan	MAFFIN provides funding support for the establishment and maintenance of the Philippines' link to the Asia-Pacific Advanced Network (APAN)
Keio University	Japan	SOI Asia (School of Internet Asia); Asian Internet Interconnection Initiatives (AI3); Trainings; information exchange

Name of Institution	Location/ Country	Nature /Description of Scientific Linkages
DANTE (Delivery of Advanced Network Technology to Europe)	United Kingdom	Trans-Eurasia Information Network 2 (TEIN2) Project; Research and education connectivity to Europe and within the Southeast Asia region; Trainings and other capability building initiatives; information exchange
		Trans-Eurasia Information Network 3 (TEIN3); Research and education connectivity to Europe and within the Southeast Asia region; Trainings and other capability building initiatives; information exchange
Asia Pacific Network Information Centre (APNIC)	Australia	Internet operation and management; regional networking activities; training; information exchange
Commission of the European Communities Information Society and Media Directorate-General (with Sigma Consultants (Orionis Division) in France, as Coordinator)	Belgium; France	Collaborative Project entitled "Further Developing Strategic R&D with South-East Asia on ICT (SEACOOP)"; Possible collaboration re: SEALING Project (Support to policy dialogues and strengthening of cooperation with Southeast Asia)
Japan Aerospace Exploration Agency (JAXA)	Japan	Multicast Experiment Using the Wideband InterNetworking Engineering Test and Demonstration Satellite (WINDS)
Pacific Rim and Grid Middleware Assembly (PRAGMA)	USA	S&T Information Exchange through Grid Forum; ASTI as a member institution
European Union-Asia Grid (EUAsiaGrid)	Italy	Requirement capture and coordination policy definition, support of scientific applications, dissemination, and training; Collaboration on grid-related activities such as participation on grid events, and informal inquiries/consultations; EU Asia Grid project
International Open Source Network (IOSN)	National Telehealth Centre/ Philippines (ASEAN HQ)	Informal collaboration on open source and open standards, promotion, and training
ASEAN Committee on S&T (COST)	Philippine counterpart (DOST)	S&T Information Exchange through the conduct of/attendance to conferences, S&T exhibition, and collaborative activities between member-countries
APIA (Asia & Pacific Advanced Network)	Malaysia	For APRICOT 2009
JAGEF (Japan-ASEAN General Exchange Fund)	Japan	Fund support for the project entitled "VLSI Testing Seminar Project"

Table 10. External Resources Generated

Donor/Name of institution	Title/Description of Assistance	Value of Assistance (in Pesos)
DOST	Funding support for the project "Infrastructure and Connectivity Component – eDOST-INFRA: Upgrading of DOST ICT Infrastructure and Interconnectivity Network"	15,206,900.00
DOST	Funding support for the project "Information Systems Component -eDOST-INFOSYS: Upgrading and Development of DOST Information Systems"	6,381,000.00
DOST	Funding support for the project "e-DOST- Open Standards: Program and Change Management and Implementation of Open Standards to DOST"	3,040,314.00
DOST	Funding support for the project "Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy (PREDICT) Prevention and Mitigation"	2,571,309.00
DOST	Funding support for the project "Boosting Grid Computing Using Reconfigurable Hardware Technology"	12,188,475.00
DOST	Funding support for the project "Boosting Social and Technological Capabilities for Bioinformatics Research"	4,156,303.00
DOST	Funding support for the project "Upgrading of Facilities fo the DOST RDIs in Support of R&D and S&T Services"	10,051,645.70
DOST	Funding support for the project "Establishment of DOST-PEZA Open Technology Business Incubator"	5,144,440.00
CICT (thru Development Academy of the Philippines)	Knowledge Networking Towards Enterprising Agricultural Communities (K-AGRINET): e-Farm & e-Consortia	9,544,908.97
PREGINET Partner Institutions	PREGINET services/subscription fees	9,624,054.00
Various individuals/institutions	Technology Commercialization of GSM Data Terminal Kit and Bayanihan Linux	264,761.00
Government/Private/Academic Institutions	Fees from trainings conducted	4,510,879.00
Various individuals/institutions	Rental fees, interest, refunds, etc.	416,694.00
TAPI	Fabrication/Production of NSTW 2008 ASTI exhibit materials/fixtures	60,000.00
DOST	Implementation of Committee on Physical and ICT Logistics Committee Activities for the CY 2009 NSTW	258,099.34

Glossary

2D/3D	Two dimensional/Three-dimensional
AdMU	Ateneo de Manila University
AI3	Asian Internet Interconnection Initiatives
APAN	Asia-Pacific Advanced Network
APIA	Asia & Pacific Internet Association
APNIC	Asia Pacific Network Information Centre
APOPS	Asia Pacific Operators
APRICOT	Asia Pacific Regional Internet Conference on Operational Technologies
APRSAF	Asia Pacific Regional Space Agency Forum
ARE	Acknowledgement Receipt of Equipment
ASEAN	Association of South East Asian Nations
BDU	Business Development Unit
BGP	Border Gateway Protocol
BL 5 for Gov	Bayanihan Linux 5 for Government
CONNECT-Asia	COllaboration for Network eNabled Education Culture, Technology and Science
CSD	Computer Software Division
CVARRD	Cagayan Valley Agriculture and Resources Resarch and Development Consortium
DDL/DLL	Domestic Data Link/Domestic Leased Line (in relation to K-Agrinet)
DMM	Digital Multimeter
DNS	Domain Name System
DNSSEC	Domain Name System Security
DOJ-PPA	Department of Justice - Parole and Probation Administration
DOST	Department of Science and Technology
DOST-PEZA	DOST Philippine Economic Zone Authority
DSL	Digital Subscriber Line
DWMM	Digital Wood Moisture Meter
EC	European Commission
eDOST-INFRA	Upgrading of DOST ICT Infrastructure and Interconnectivity Network
eDOST-Open Standards	Program & Change Management and Implementation of Open Standards to DOST
EGEE	Enabling Grids for E-Science
ESG	Embedded Systems Group
EU	European Union
EUAsiaGrid	European Union - Asia Grid
EWST	Early Warning System for Tsunami
FAD	Finance and Administrative Division
FITS	Farmers Information and Technology Service
FMON	Field Monitoring System
FNRI	Food and Nutrition Research Institute
FP7	Framework Programme
FPRDI	Forest Products Research and Development Institute
GEANT2	Gigabit European Academic Network 2
GSM	Global Systems for Mobile Communication
HPC	High Performance Computing
HPRC	Boosting Grid Computing Using Reconfigurable Hardware Technology
IC	Integrated Circuit
ICT	Information and Communications Technology
IP-VPN	Internet Protocol Virtual Private Network
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IT	Information Technology
ITB	Invitation to Bid
ITDI	Industrial Technology Development Institute
JAGEF	Japan-ASEAN General Exchange Fund
JAXA	Japan Aerospace Exploration Agency
K-Agrinet	Knowledge Networking Towards Enterprising Agricultural Communities : e-Farm and e-Consortia
KM	Knowledge Management

KMD	Knowledge Management Division
LAN	Local Area Network
LCD	Liquid Crystal Display
MAFFIN	Ministry of Agriculture, Forestry and Fisheries Information Network
MCU	Microcontroller Unit
MIRDC	Metals Industry Research and Development Center
MOOE	Maintenance and Other Operating Expenses
MoU	Memorandum of Understanding
MPLS	Multi-Protocol Label Switching
NDCC	National Disaster Coordinating Council
NREN	National Research and Education Network
OD	Office of the Director
ODF	Open Document Format
OGCE	Open Grid Computing Environments Collaboratory
PAGASA	Philippine Atmospheric, Geophysical, and Astronomical Services Administration
PBS	Boosting Social and Technological Capabilities for BioInformatics Research
PC	Personal Computer
PCASTRD	Philippine Council for Advanced Science and Technology Research and Development
PerforMERS	Performance Monitoring, Evaluation, and Reporting System
PhNOG	Philippine Network Operator Group
PNRI	Philippine Nuclear Research Institute
PR	Purchase Request
PREDICT	Philippine Real-time Environment Data Acquisition and Interpretation for Climate-related Tragedy
PREGINET	Philippine Research, Education, and Government Information Network
PsciGrid	Philippine e-Science Grid
PSTCs	Provincial Science and Technology Centers
PTRI	Philippine Textile Research Institute
R&D	Research and Development
RDD	Research and Development Division
REN	Research and Education Network
RIRs	Regional Internet Registries
RMIS	Regional Management Information Services
RoS	Regional Offices
S&T	Science and Technology
SCMIT	ASEAN Sub-Committee on Microelectronics and Information Technology
SEACOOP	Further Developing Strategic Science and Technology Cooperation with Southeast Asia on Information and Communications Technology
SEALING	Support to Policy Dialogues and Strengthening with Southeast Asia
SEI	Science Education Institute
SMS	Short Message Service
SOI Asia	School over the Internet - Asia
SPECFEM3D	Spectral Finite Element Method 3D
SSED	Solutions and Services Engineering Division
SSH	Secure Shell
TACIS	Tests Analyses and Calibration Information System for DOST
TEIN 2	Trans Eurasia Information Network 2
TEIN 3	Trans Eurasia Information Network 3
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UP	University of the Philippines
UP-CSRC	UP Computational Science Research Center
UP-PGH	UP Philippine General Hospital
UPLB BIOTECH	UP Los Baños National Institute of Molecular Technology and Biotechnology
VLSI	Very Large Scale Integration
VoIP	Voice over Internet Protocol
WINDS	Wideband Internetworking Engineering Test and Demonstration Satellite
YTC	Yongden Technology Corporation

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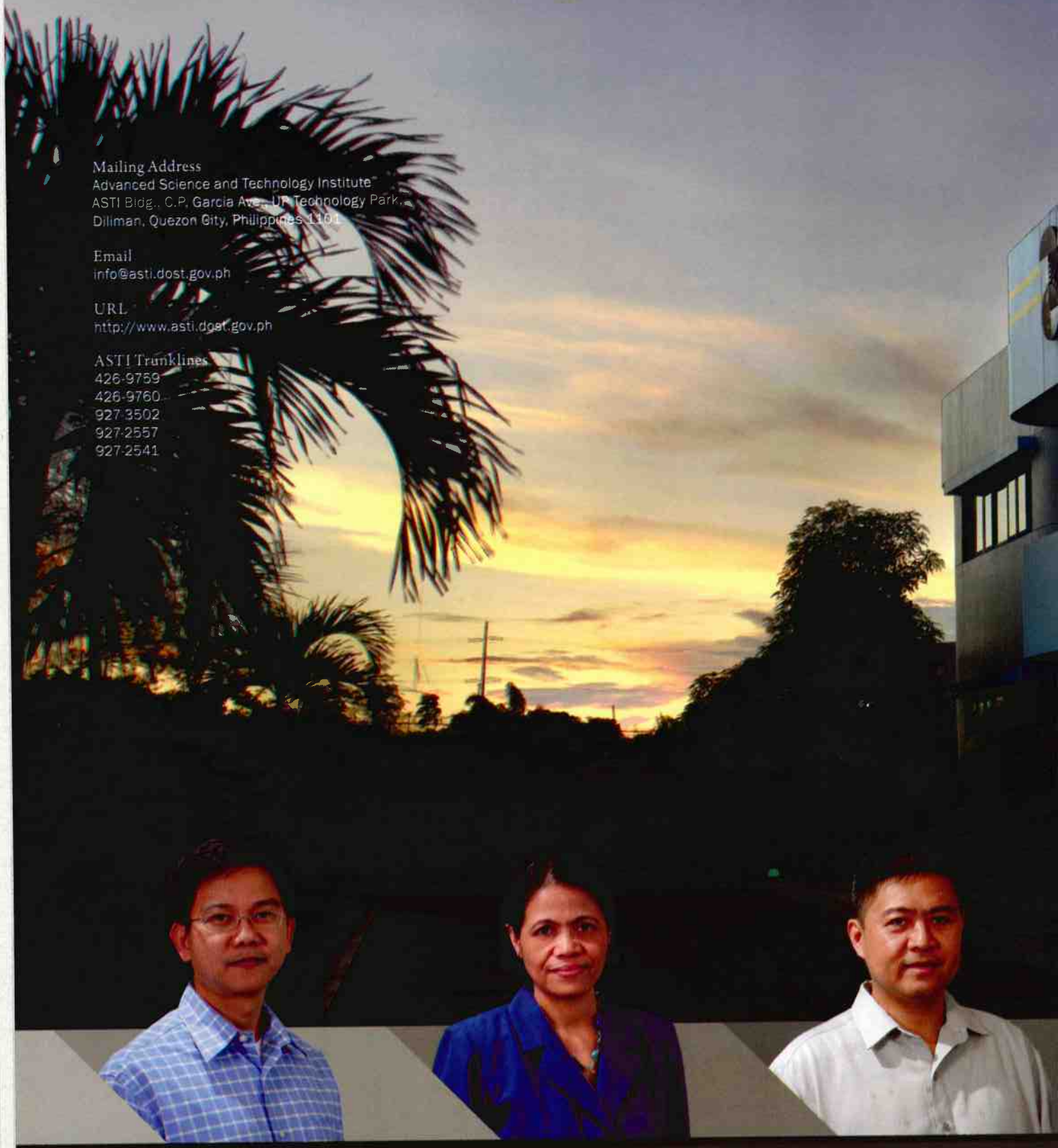

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Publisher	Advanced Science and Technology Institute
Year	2009

IMAGES in this years' Annual Report were contributed by the men and women of the Advanced Science and Technology Institute.


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